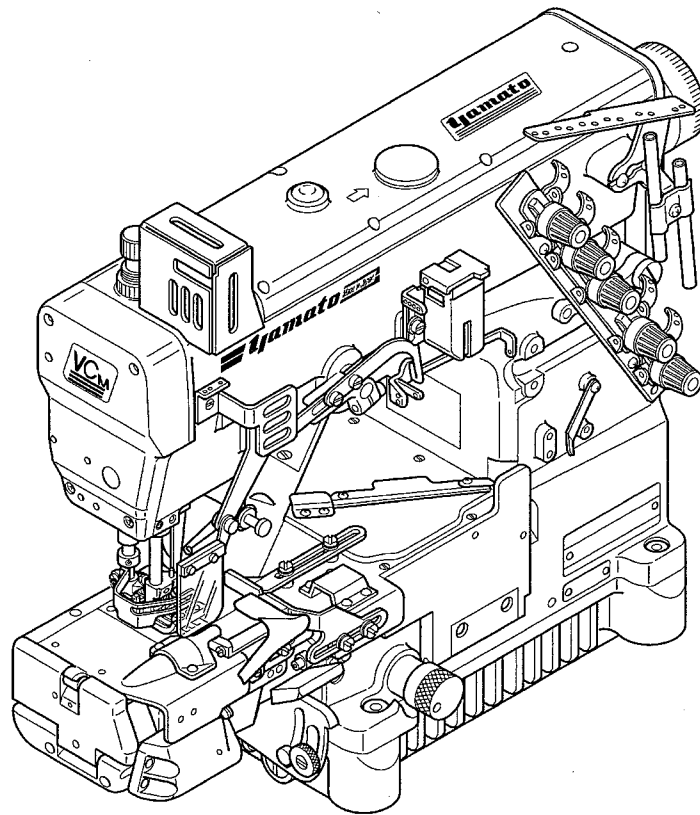


# ***Yamato***<sup>®</sup>

## Instruction Manual

High speed cylinder bed 3-needle interlock stitch machine  
with left-hand trimming knife

# VC3711M class










Thank you for having purchased the Model VC3711 class.  
Before using your VC 3711 class, please read the instruction  
manual and understand the contents well.  
After reading the instruction manual, please keep it in a  
location where it is easily accessible to the operator.

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### Attention

◇ This instruction manual is designed mainly for technicians, but it is advisable that also operators read the instructions with  mark to use the machine properly.

◇ The numbers in lower left corners of figures are figure numbers. We use them in texts as needed for your reference.

### Attention

The description in this instruction manual is subject to change for improvements of the commodity without notice.



# Safety instructions



## 1. To ensure safe use

Always observe the following instructions to ensure the safe use of the industrial sewing machines and devices.

### 1-1 Application and purpose

The sewing machine is designed to improve productivity in the sewing industry and must not be used for other applications and purposes. Do not use this sewing machine until it can be confirmed that safety measures for the drive units have been taken.

### 1-2 Before use

Read all instruction manuals thoroughly before starting the use of this machine and follow them.

Also, read the instruction manual for the installed drive unit.

### 1-3 Working environment

DO NOT WORK IN THE FOLLOWING ENVIRONMENTS:

- Place where atmosphere temperature and humidity give a bad influence the performance of sewing machines.
- Outdoors and place where the sewing machines are exposed to sunlight directly.
- Atmosphere containing dust, corrosive gases or flammable gases.
- Place where voltage fluctuation exceeds  $\pm 10\%$  of the rated voltage.
- Place where power capacity necessary for the used motor specifications cannot be secured.
- Place where strong electric or magnetic fields are generated such as near large-output high frequency transmitters or high frequency welding machines.

### 1-4 Unpacking and transportation

- (1) Unpack from the top.
- (2) Never hold the parts near the needle or threading parts when removing the sewing machine head from the buffer of box.
- (3) When carrying the sewing machine head, have an assistant.
- (4) Pay attention not to get excessive impact or shock when moving the sewing machine head with a pushcart.

## 2. Installation and preparation

### 2-1 Instruction and training

Operators and workers, who supervise, repair or maintain the machine head and machine unit, are required to have the adequate knowledge and operation skills to do the job safely. In order to establish such necessary conditions, it needs for the employer to plan and enforce the safety education and training to those workers.

### 2-2 Sewing table and motor

- (1) Prepare a machine table that has enough strength to withstand the weight of the sewing head and any reaction while operating.
- (2) Maintain a comfortable working environment with considering the lighting and the arrangement of sewing machine so that the operators can work smoothly.
- (3) When installing the control box and the related parts on the sewing machine, take care about the posture of the worker.
- (4) Install the drive unit correctly according to the instruction manual.

### 2-3 Wiring

- (1) Never connect the plug for power supply until assembly is finished.
- (2) Fix the connectors securely to the sewing machine head, motor, and electric apparatus.
- (3) Do not apply excessive force to the connection cords.
- (4) Connect the cords away from the driving parts.
- (5) Place the ground wire securely to the designated position on the machine head.

### 2-4 Before operation

- (1) Take care not to attach lubricant, silicone oil, and grease on the eyes or skin.

Keep them away from children.



# Safety instructions



- (2) Be sure to fill or drop lubrication oil before operating the sewing machine. Use the Yamato SF oil as specified.
- (3) Never put your hand under the needle or near the moving parts of the machine when turning on power supply switch.
- (4) When operating a new sewing machine, make sure the rotating direction of pulley agrees with the rotating-direction mark.

## 2-5 During operation

- (1) Be sure to operate the sewing machine with the safeguards such as belt cover, finger guard, and eye guard.
- (2) Never place the finger, hair or objects under the needle or close to the moving parts while operating the sewing machine.
- (3) Be sure to turn off the power supply switch when threading or replacing the needles.
- (4) Never place your hands close to the knives when operating the sewing machine with the trimming devices.
- (5) Be sure to turn off the power supply switch when terminating the sewing work or leaving the sewing machine.
- (6) If the sewing machine malfunctions, abnormal sound or smell something unusual while operating, be sure to turn off the power supply switch.

## 2-6 Removal

- (1) Turn off the power supply switch if removed or replaced any parts or during adjustment of sewing machine.
- (2) Do not pull the cord when removing the plug. Be sure to hold the plug itself.
- (3) A high voltage is applied inside the control box. Turn off the power supply switch and wait more than 5 minutes before opening the cover.

## 3. Maintenance, inspection, and repair

- (1) Follow the instruction manuals for maintenance, inspection, and repair.
- (2) Entrust the maintenance, inspection, and repair to specially trained personnel.
- (3) Be sure to turn off the power supply switch and make sure the sewing machine and motor completely stop before the maintenance, inspection, and repair. (If using a clutch motor, take care that the motor keeps turning for a while even after turning off the power supply switch.)
- (4) Be sure to remove the gasket too, when the cover removed at the maintenance, inspection, and repair. If not removed, may be injured at the edge of gasket.
- (5) Do not modify the sewing machine by the customer's judgment.
- (6) Be sure to use original replacement parts for repairs or maintenance.

## 4. Caution signs and alert pictorial markings

This instruction manual contains the following caution signs and alert pictorial markings to prevent you from injuring yourself or the sewing machine from being damaged.

Please follow the instructions.

### 4-1 Meanings of caution signs

#### **WARNING**

**WARNING** indicates potentially hazardous situations which, if not heeded, could result in death or serious injury to you and others.

#### **CAUTION**

**Caution** indicates hazardous situations which, if not heeded, may result in minor or moderate injury to you and others, or may result in machine damage.

**NOTE** is used to emphasize essential information.



# Safety instructions



## 4-2 Alert pictorial markings



This mark indicates the warning which, if not heeded, could result in death or Serious injury.



This mark indicates the caution for high temperature.



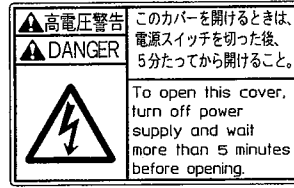
This mark indicates the warning which, if not heeded, could result in death or Serious injury.



High-voltage applies in the control box. This label indicates that electric shock may be caused.



This mark indicates the caution which, if not grounded, the machine or device could malfunction and could result in personal injury.



High-voltage applies in the control box. This label indicates that electric shock may be caused.



This label is affixed on the safeguards. Considering the operation, it is not affixed on the finger guard and eye guard. Be sure to operate with the finger guard and eye guard in position.

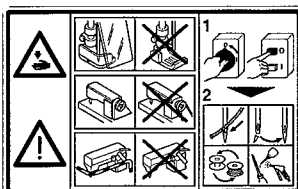


Stepping motor and solenoid may overheat if used continuously. To prevent a burn, take care not to touch.

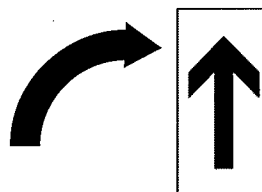


If not connected earth line, static electricity may be generated and inflict injury on person. In addition, the malfunction of electric system may cause injury to person.

## 5. Warning labels on sewing machines



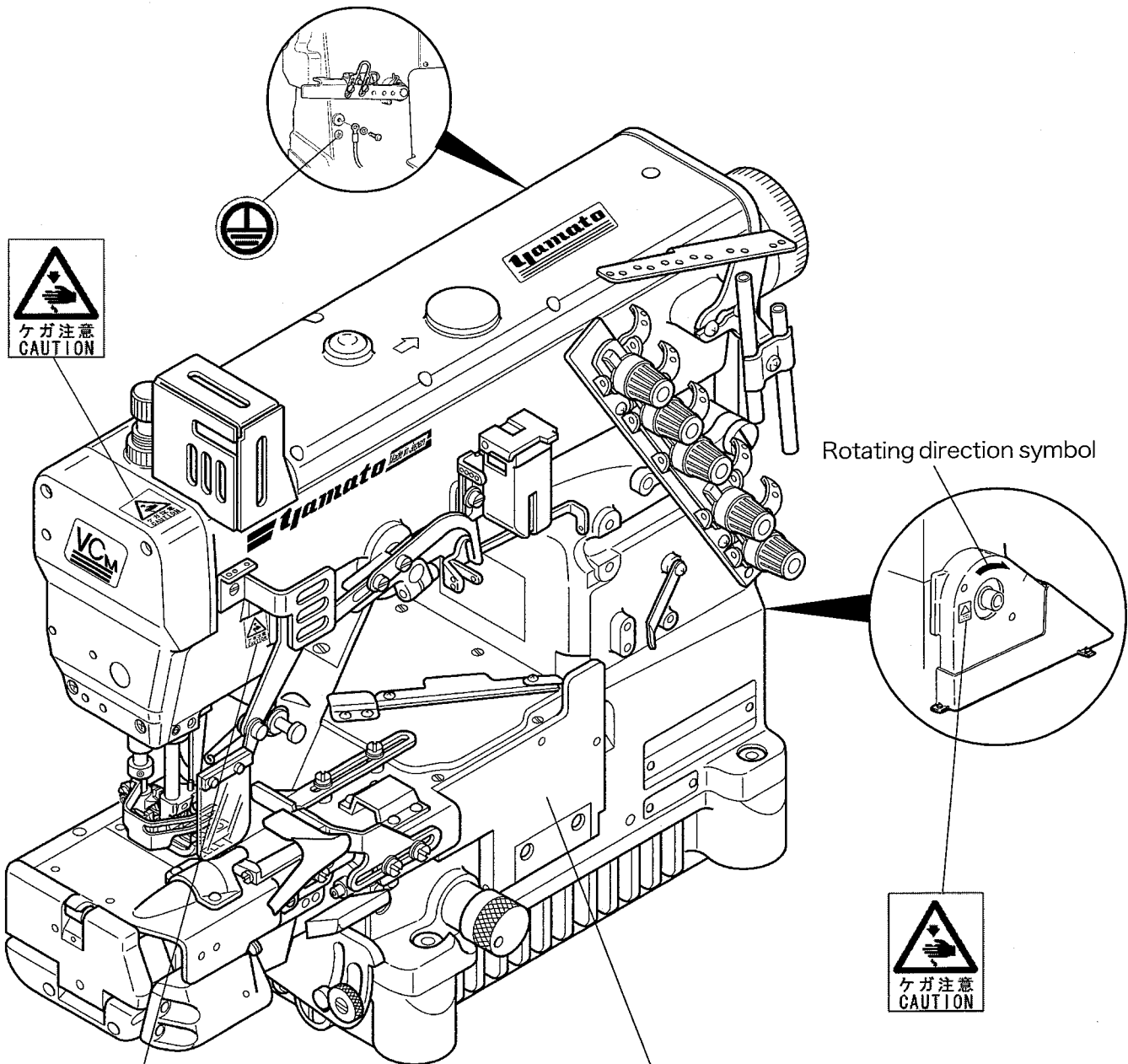
This label indicates that removal of the safeguards and works except for sewing performance while the power supply switch is on are prohibited. (For details, see the next page.)





Check the rotating direction of machine pulley agrees with 'ROTATING-DIRECTION SYMBOL'.



# Safety instructions



 **CAUTION** 

Do not operate without eye guard and safety devices.  
Before threading, changing needle, cleaning etc. switch off main switch.

# 1.Name of each part

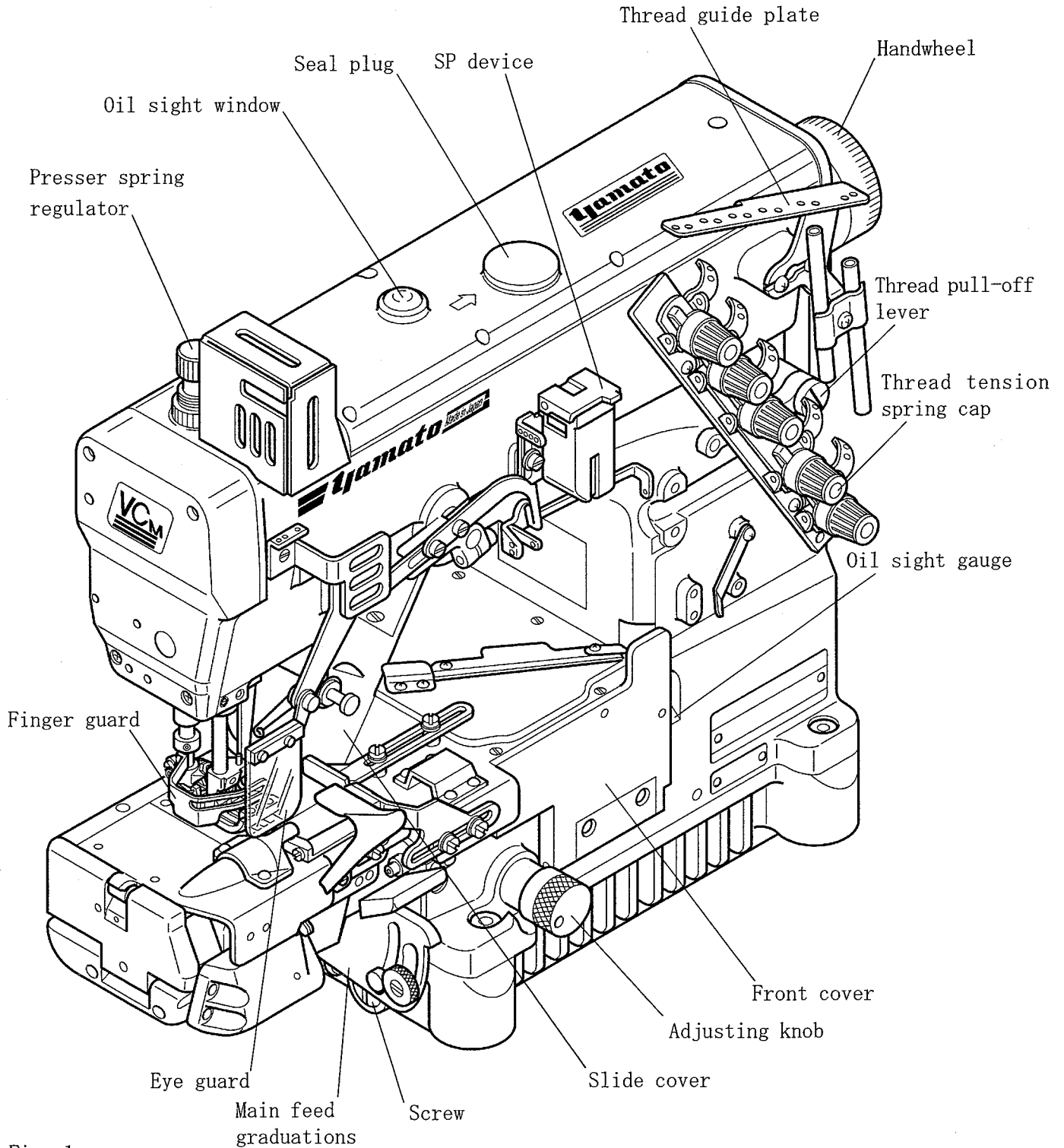


Fig. 1



# 2. Installation

## 2.1 Table cutting diagram

### 2.1.1 Table top type (Type A: standard)

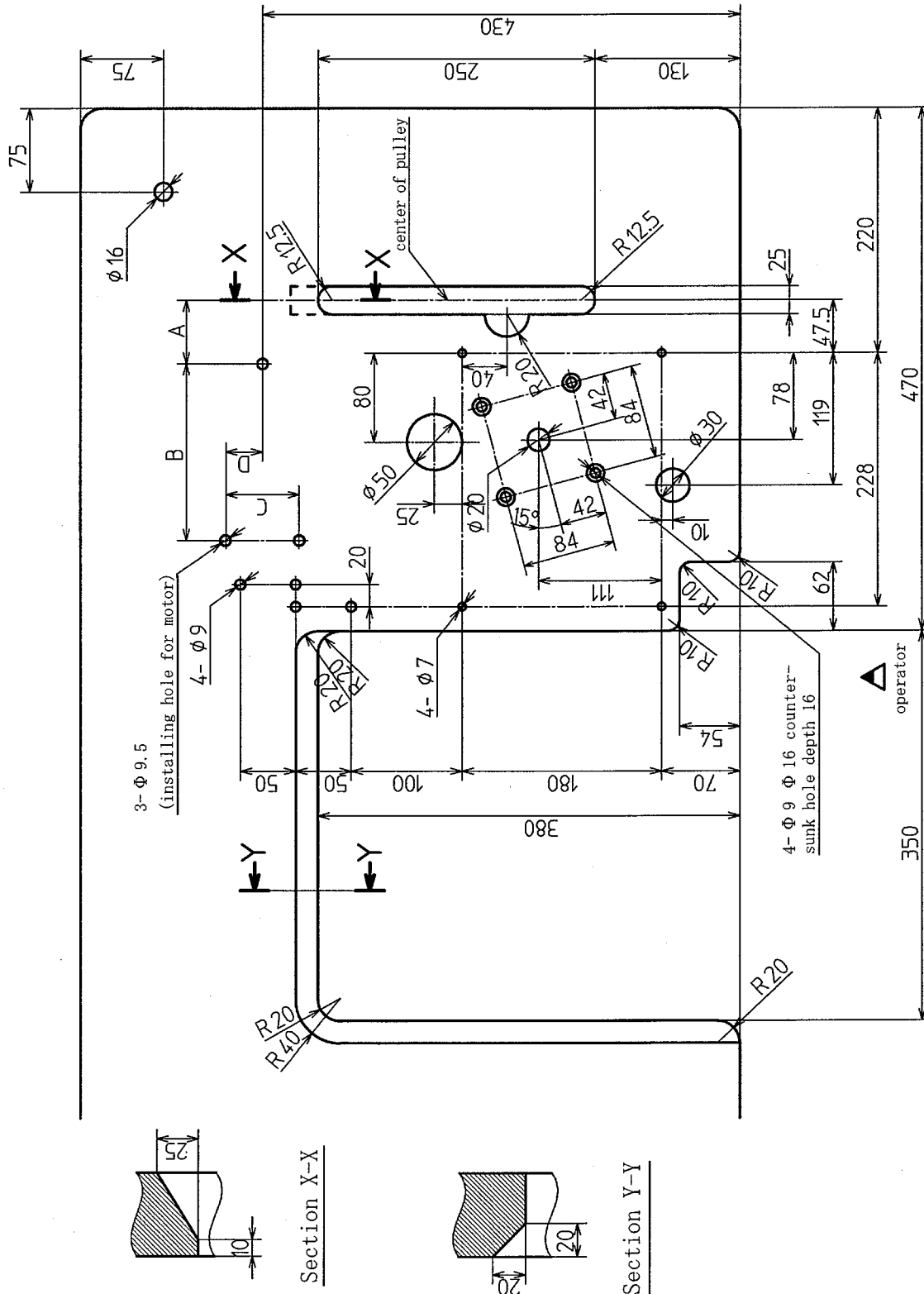


Table dimensions 1200 × 595 × 50

Refer to the instruction of the motor for dimensions A, B, C, and D.

Fig. 2



## 2.2 Table top type

Install the machine correctly referring to Figs. 4 and 5.

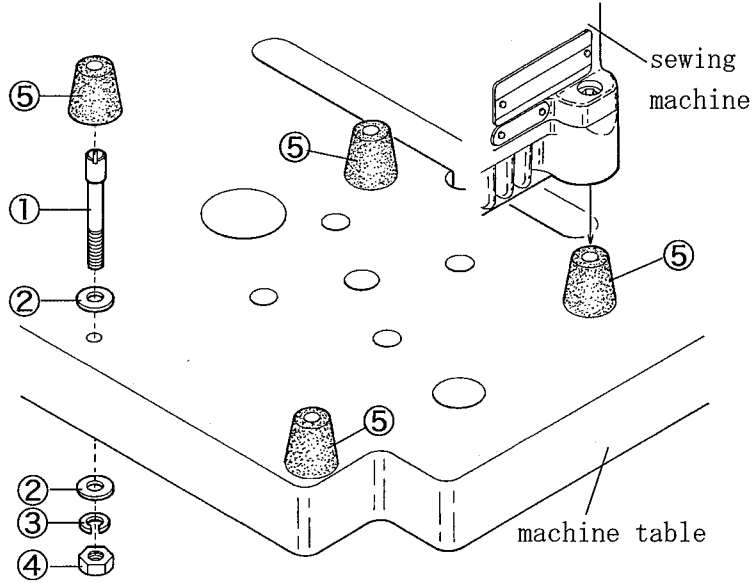


Fig. 4

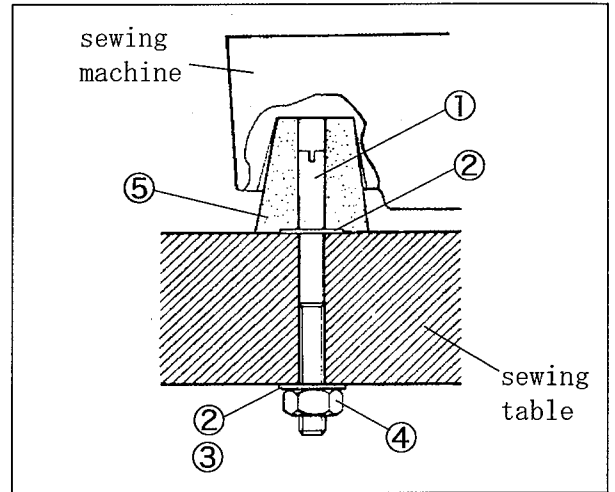


Fig. 5

## 2.3 Motor and belt

See the instruction manual for the motor used and install the motor properly.

To install the clutch motor, align the center of the machine pulley with that of the motor pulley when the motor pulley shifts to the left with toeing down the pedal.

Note: Table 1 shows the outside diameter of the motor pulley, rpm of the machine, and size of the belt when using the clutch motor of 3-phase, 2-pole, 400W (1/2HP).

The outside diameter on the table shows the nearest size to the calculated values based on the commercial available pulleys at intervals of 5 mm.

### ⚠ CAUTION

Use only those motor pulleys applicable to the machine. If not, the sewing speed will be over maximum and it can cause the damage to the machine.

## 2.4 Hanging belt

### ⚠ WARNING

Before hanging belt, ALWAYS turn the power switch OFF and check that the machine has already stopped.

Use the M-type of V-belt.

- (1) Hang the belt ① on the machine pulley ②, and then on the motor pulley ③ while rotating the machine pulley.
- (2) Adjust the belt tension so that the belt has 10 - 20 mm slack when its center is pushed with 10N (1.02kgf).
- (3) Lock the pulley with the nut ④.

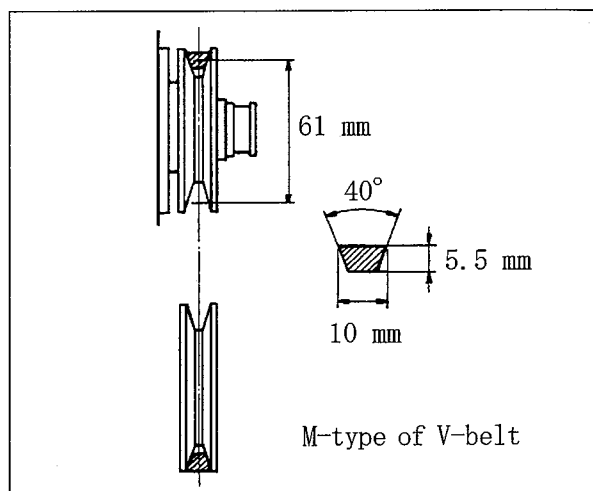


Fig. 6

| Outside diameter of pulley (mm) | rpm of machine (rpm) |       |
|---------------------------------|----------------------|-------|
|                                 | 50H z                | 60H z |
| 80                              |                      | 4150  |
| 85                              |                      | 4400  |
| 90                              | 3850                 | 4650  |
| 95                              | 4000                 | 4900  |
| 100                             | 4250                 |       |
| 105                             | 4500                 |       |
| 110                             | 4700                 |       |
| 115                             | 4900                 |       |

Table 1

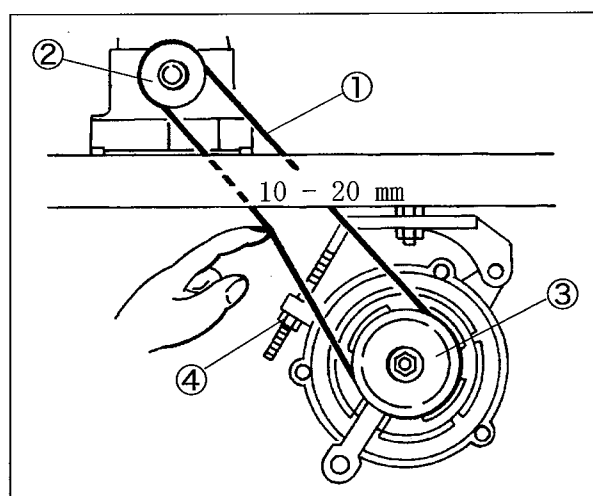


Fig. 7

### 2.5 Belt cover

#### **WARNING**

Be sure to install belt cover to prevent you from injuring and a material from being caught by the belt.

- (1) Install the belt cover ①.
- (2) Fix the belt cover(lower) ② on the machine table only for table top type.

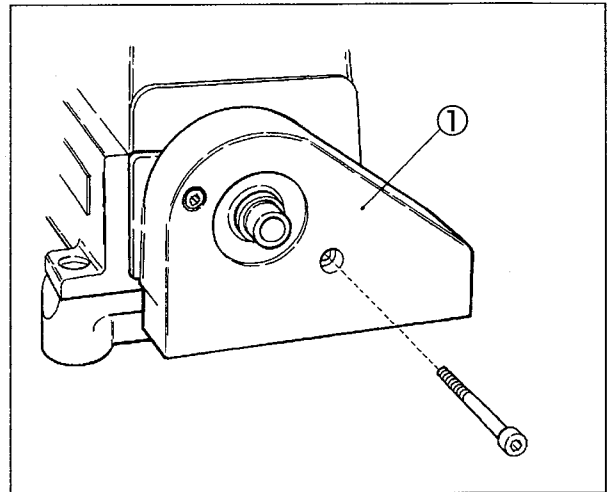


Fig. 8

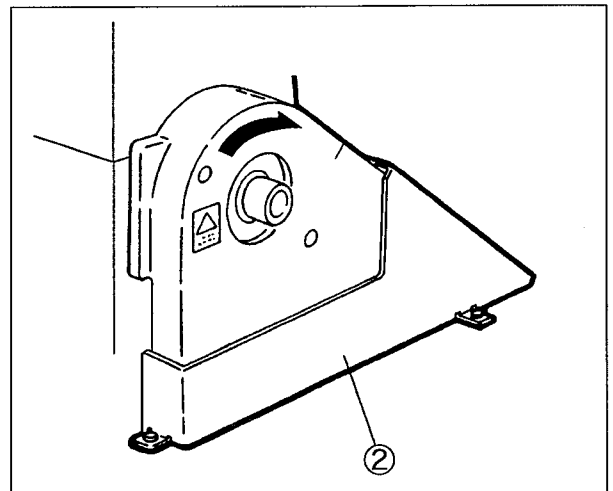


Fig. 9

### 2.6 Eye guard and finger guard

To ensure safe use, always install the eye guard ③ and the finger guard ④ on the prescribed positions when operating.

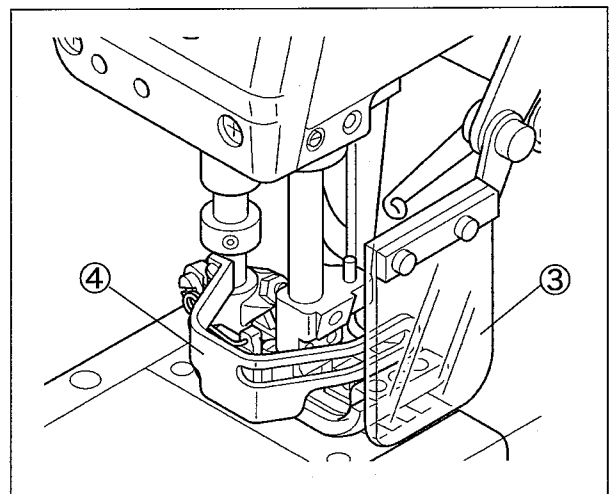


Fig. 10

## 2.7 Connecting suction pipe

Connect the dust hose ② to the suction pipe ①.

### ○ Using air pipes

Install the hand valve ③ on the top of the machine table.

Connect the suction pipe ①, the hand valve ③, and the air source (regulator or solenoid valve) with the air pipes ④.

Set the pressure of the regulator ⑤ to 0.1 - 0.2 MPa (1 - 2 kgf/cm<sup>2</sup>). With UT-A device, set it to 0.4 - 0.5 MPa (4 - 5 kgf/cm<sup>2</sup>).

### ○ Using vacuum system

Connect the dust hose ② to the vacuum system without the hand valve ③ and the air pipes ④.

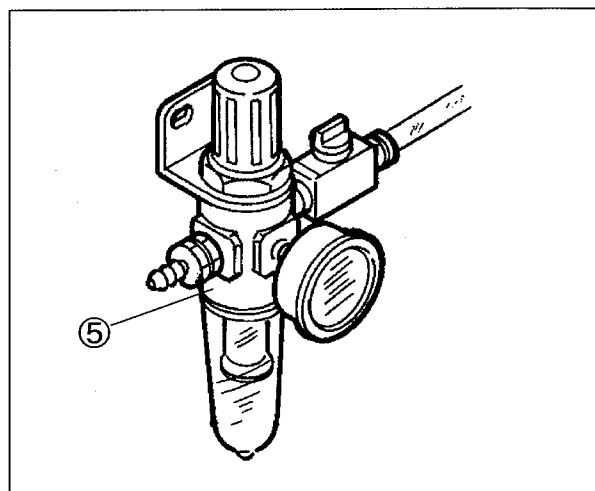


Fig. 11

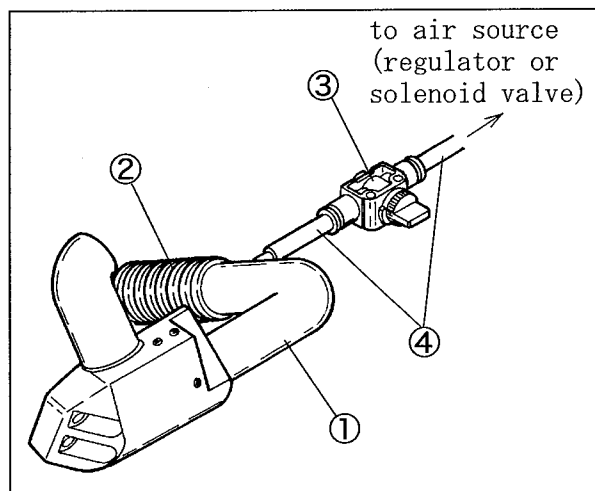


Fig. 12

# 3. Sewing speed and rotating direction of pulley

The maximum sewing speed is 5000 rpm (during intermittent operation).

Run a new machine at 4500 rpm during the first 200 hours (for about one month) so that the machine can offer a long service life in good condition.

The rotating directions of the motor pulley① and the machine pulley② are clockwise as shown in the figure.

## ⚠ CAUTION

If rotating in reverse direction, oil cannot be supplied properly. It can cause the damage to the machine.

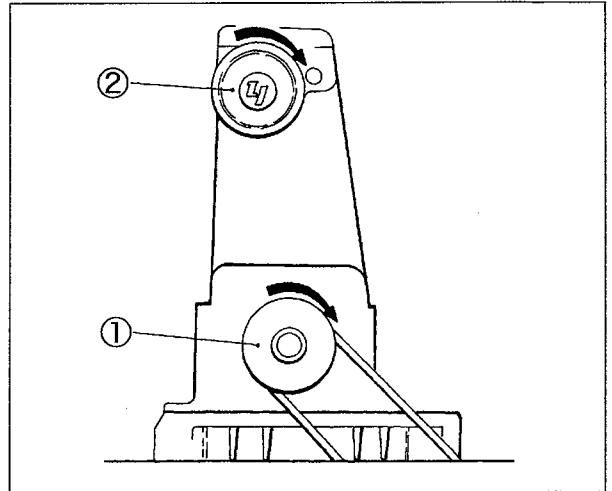


Fig. 13

# 4. Lubrication

## ⚠ WARNING

Before lubricating, ALWAYS turn the power switch OFF and check that the machine has already stopped.

### 4.1 Lubricating oil

Use YAMATO SF OIL No. 28.

## ⚠ CAUTION

Never add additives to the oil.  
If added, it can cause the deterioration of the oil and the damage to the machine.

### 4.2 Lubricating

When using a new machine, or a machine which has not been run for a while, supply the oil to the needle bar ① and the looper bar ② with two or three drops.

Remove the seal plug ③ indicated "OIL-IN" and supply the oil to the upper line of the oil sight gauge ④.

Check that the oil splashes from the nozzle inside the oil sight window ⑤ with running the machine. If the oil does not splash from the nozzle, see "4.4 Checking and replacing oil filter" on page 10.

## ⚠ CAUTION

Too much oil or insufficient oil can cause oil leakage and machine trouble. Be sure to keep the oil level between the lines. Also too much lubrication can cause the oil to scatter and material to be stained.

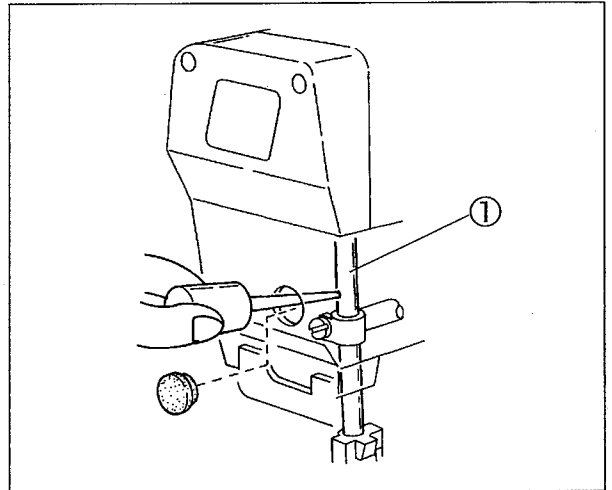


Fig. 14

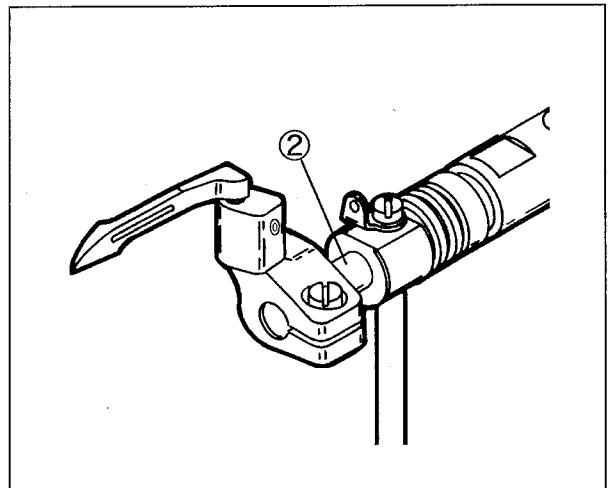


Fig. 15

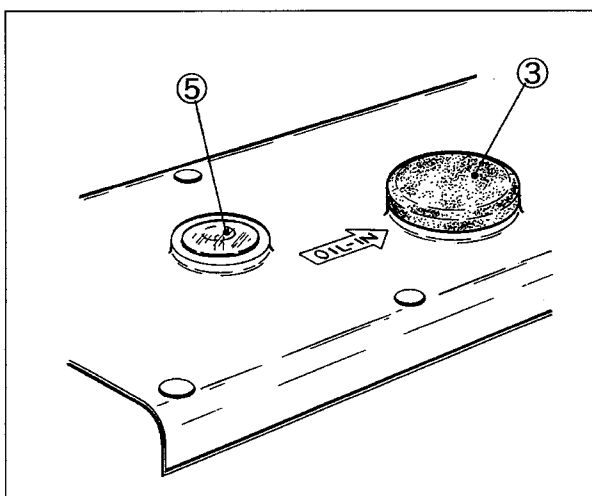


Fig. 16

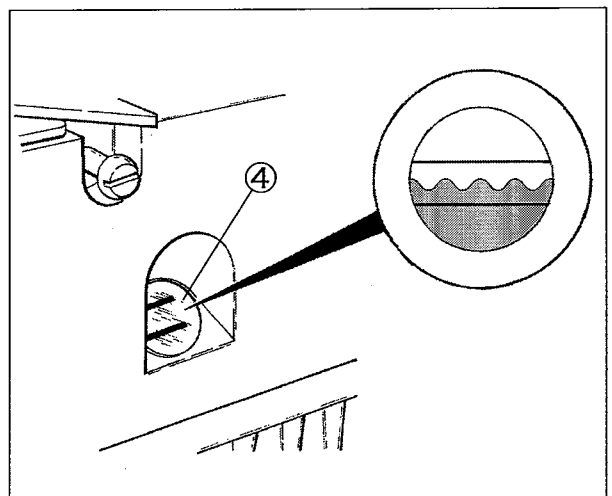


Fig. 17



### WARNING

Before lubricating, ALWAYS turn the power switch OFF and check that the machine has already stopped.

## 4.3 Changing oil

### Period of changing:

When using a new machine, change the lubricating oil after running the machine for 200 hours (for about one month). After that, change the oil once or twice a year.

### Procedure for changing:

- (1) Remove the belt cover. (See page 7)
- (2) Remove V-belt from the motor pulley. (See page 6)
- (3) Remove the machine from the machine table.
- (4) Set a vessel received the oil under the screw ①.
- (5) After removing screw ①, the oil is drained.

### NOTE

Be careful not to soil the V-belt and the machine pulley with the oil.

- (6) Reset the screw ①.
- (7) Change the oil. (See “4.2 lubricating” on page 9)
- (8) Reset the machine on the machine table.
- (9) Hang V-belt on the motor pulley and reset the belt cover. (See pages 6 and 7)

## 4.4 Checking and replacing oil filter

- ◆ If the oil filter ② is clogged with dust, lubrication cannot be done properly.
- ◆ Remove the oil filter cap ③ and the oil filter ② to check them every six months. If clogged or cracked, clean or replace the oil filter.
- ◆ If the oil is splashed from the nozzle insufficiently or includes many bubbles though the oil is sufficiently kept, check or replace the oil filter.

### NOTE

Carefully check and replace them without spilling the oil stagnant in the oil filter ② when loosening screw ④.

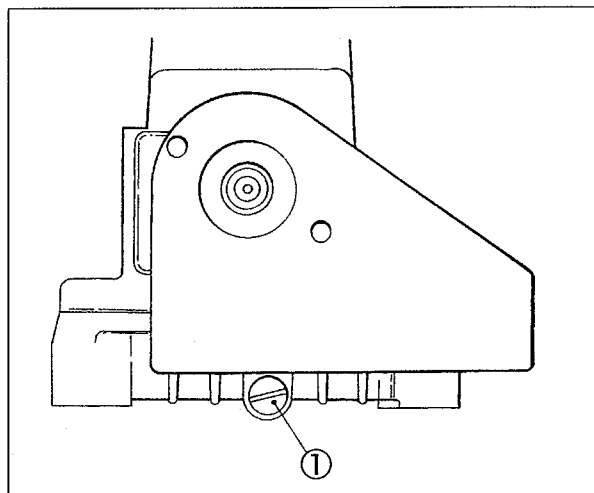


Fig. 18

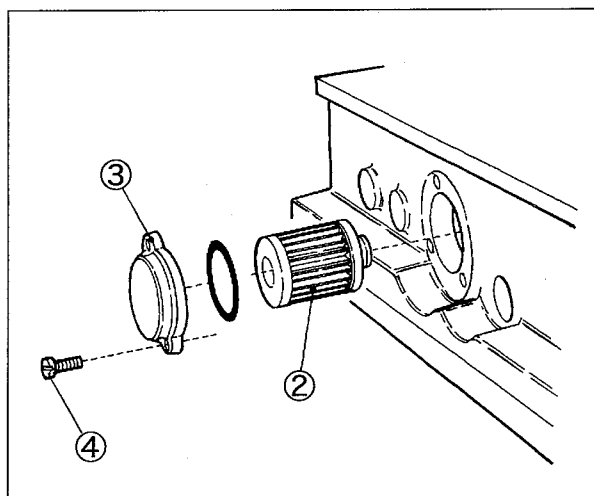


Fig. 19

# 5. Proper operation

## 5.1 Needle system

Use UY × 128GAS (UY128GAS).

Select the proper needle in size depending on a thickness and a type of the fabric.

|                   |    |    |    |    |    |    |
|-------------------|----|----|----|----|----|----|
| Japanese standard | 9  | 10 | 11 | 12 | 13 | 14 |
| Metric standard   | 65 | 70 | 75 | 80 | 85 | 90 |

Table 2

## 5.2 Installing needles



### WARNING

Before installing, ALWAYS turn the power switch OFF and check that the machine has already stopped.

- (1) Loosen the screws ① with a screwdriver. (Fig. 20)
- (2) Remove the old needle with a pair of tweezers.
- (3) Insert a new needle into the needle clamp ② as far as it will go with facing its scarf to the right back. (Figs. 21 and 22)
- (4) Tighten the screws ① with a screwdriver

### NOTE

The tightening torque of the screws ① is 0.6N·m(6kgf·cm).

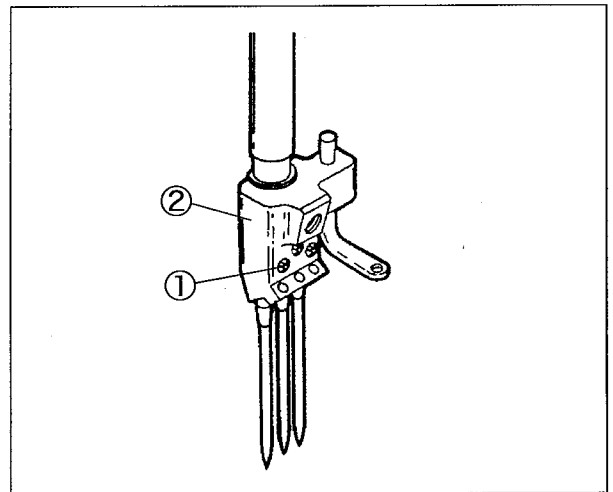


Fig. 20

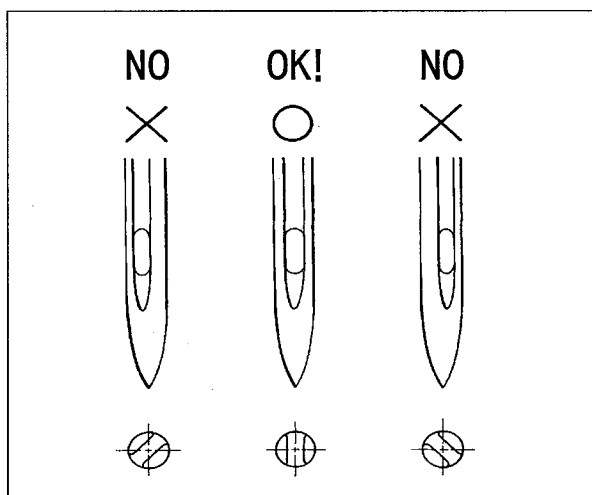


Fig. 21

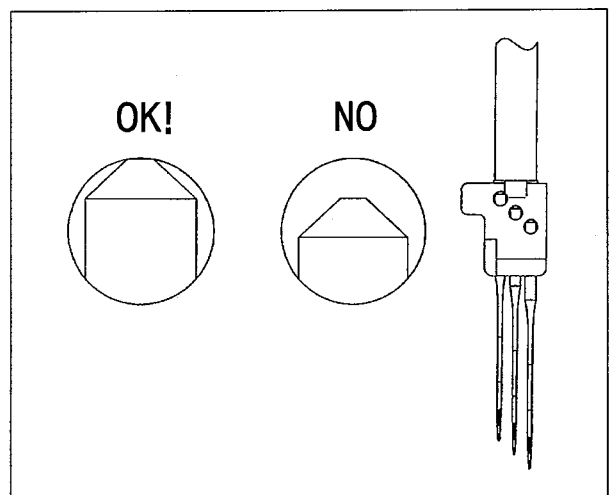


Fig. 22

## 5.3 Threading



When threaded, rethread after knotting preset threads.

When not threaded, thread correctly as shown in Fig. 23.

A: Needle thread

Pull out the thread until it is in front of the needles. Then, cut off the knots before needle eye to rethread.

Thread correctly for the left needle in the inmost position as shown in the figure.

B: Spreader thread

Pull the thread until the knot is out.

C: Looper thread

Pull the thread until the knot is out. Then, cut off the knot.

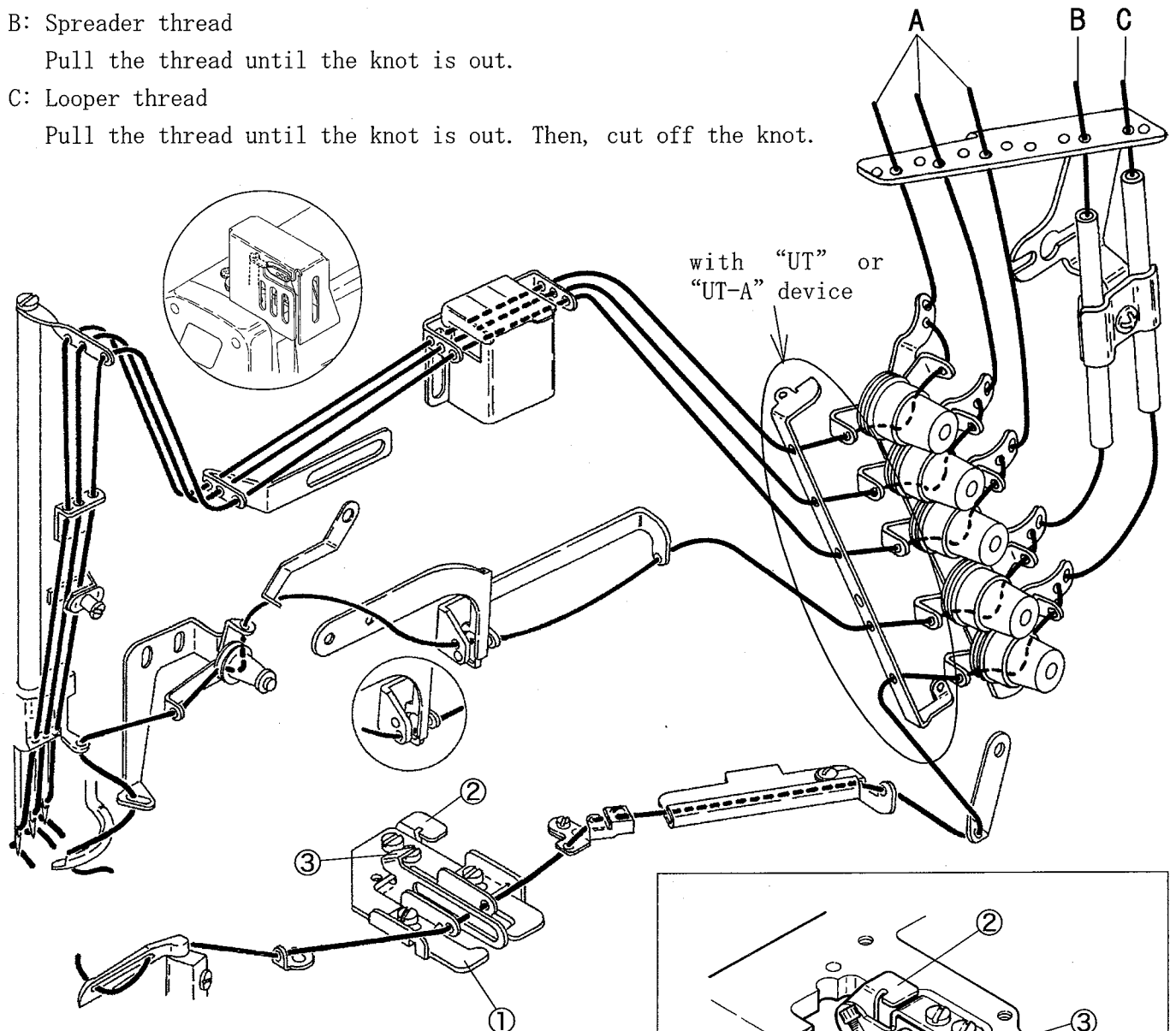


Fig. 23

Note: For easy threading, push the supporting plate stop ② to jump up the supporting plate ①.

After threading, push the cast-off plate ③ to reset the supporting plate securely.

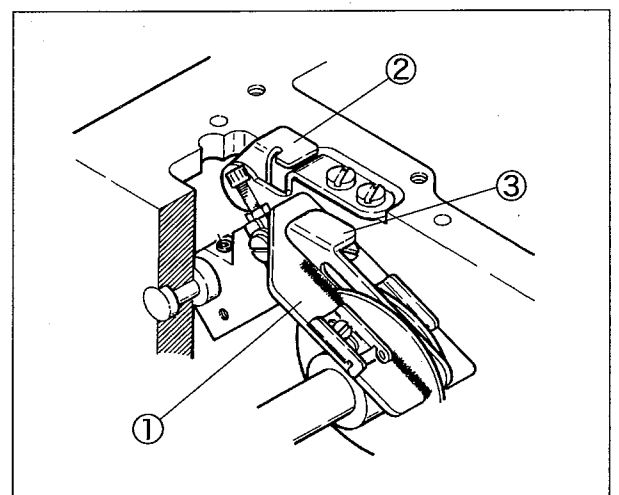


Fig. 24

## 5.4 Adjusting thread tension



Adjust the thread tension with the thread tension spring caps ① depending on fabric type, thread type, seam width, stitch length, and other sewing conditions.

- To tighten the thread tension, turn the caps clockwise.
- To loosen it, turn them counterclockwise.

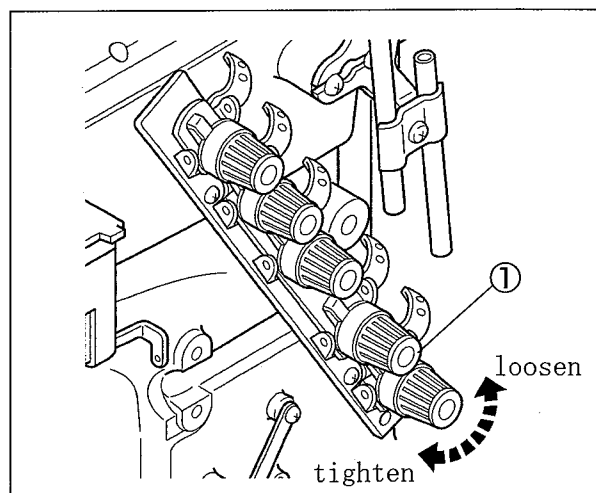


Fig. 25

## 5.5 Pressure of presser foot



Loosen the lock nut ② and turn the presser spring regulator ③ to adjust the pressure.

- To increase the pressure, turn it clockwise.
- To decrease the pressure, turn it counterclockwise.

Keep the pressure to a minimum for stable sewing performance.

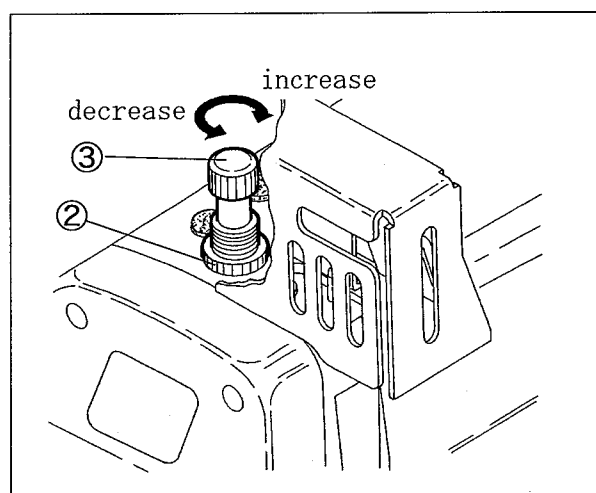


Fig. 26

## 5.6 Adjusting position of presser foot

### WARNING

Before adjusting, ALWAYS turn the power switch OFF and check that the machine has already stopped.

Adjust left-and-right position of the needle holes of the presser foot.

Loosen the screw ④. Move the front of the presser foot right or left so that the needles drop in the centers of the needle drops respectively.

Then, tighten the screw ④ securely.

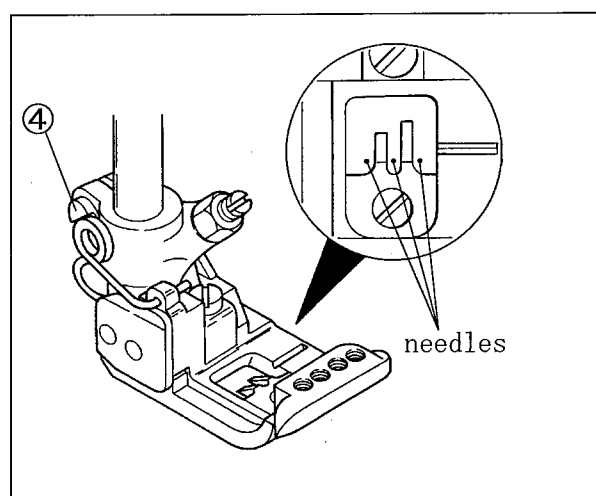


Fig. 27

## 5. Proper operation

### WARNING

Before operating, ALWAYS turn the power switch OFF and check that the machine has already stopped.

## 5.7 Adjusting stitch length

Each graduation on the machine pulley indicates the length (mm) for one stitch.

After sewing, the actual stitch length has difference from the length on graduation. It depends on the application, a type and a weight of the fabric, or the differential ratio.

### Adjusting procedure:

- (1) Rotate the pulley while the pushing push button ①. At the point as far as it will go, again push it securely.
- (2) With keeping that, align desired graduation of the pulley with the mark ② on machine arm. (Fig. 29)
- (3) Release the push button ①.

- To decrease stitch length, turn the pulley clockwise.
- To increase it, turn it counterclockwise.

### CAUTION

Check that push button is released completely and the pulley rotates smoothly.

Stitch length is adjustable from 1.4 to 3.6 mm. Table 3 shows the number of stitches per inch (25.4 mm) and 30 mm converted to the stitch length.

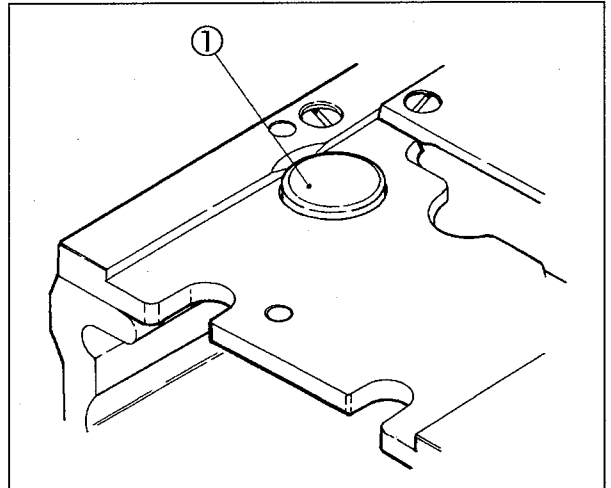


Fig. 28

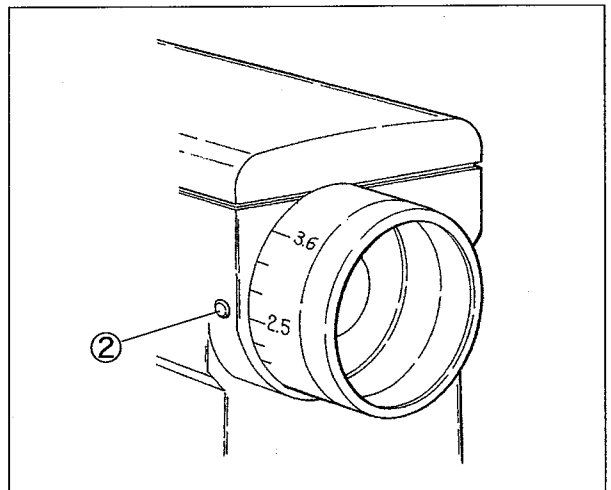


Fig. 29

| Stitch length (mm) | Number of stitch (per 1 inch (25.4 mm)) | Number of stitch (per 30 mm) |
|--------------------|---|------------------------------|
| 3.6                | 7                                       | 8                            |
| 2.5                | 10                                      | 12                           |
| 2.0                | 12.7                                    | 15                           |
| 1.4                | 18                                      | 21                           |

Table 3

## 5.8 Adjusting movement of differential feed dog (differential feed)



The differential and the main feed dogs move independently.

Changing movement of each feed dog can be obtained required normal or reverse differential feed.

Readjust differential feed after adjusting the stitch length.

### ◆ Ex.) "2" for the main feed dog

Align "2" on the graduations by turning the adjusting knob ① clockwise, resulting in differential ratio to 1:1.

- more than "2" - normal differential
- less than "2" - reverse differential

The movement of the differential feed dog is adjustable up to "4".

### ◆ Using differential feed control lever

Between the line indicated on the graduations when turning the adjusting knob ① and the stopper screw ②, fix the required position with the nut ③.

Use chain with the differential feed control lever when adjusting the movement during sewing.

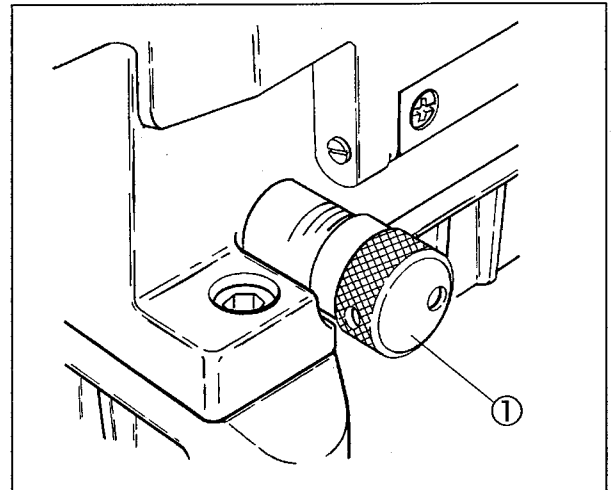


Fig. 30

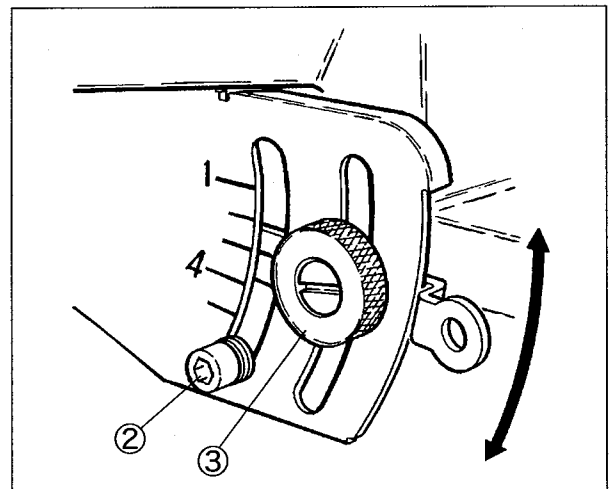


Fig. 31

Table 4 shows the differential ratio based on the stitch length.

| Stitch length (mm) | Max. normal differential | Max. reverse differential |
|--------------------|--------------------------|---------------------------|
| 3.6                | 1:1.1                    | 1:0.3                     |
| 2.5                | 1:1.6                    | 1:0.4                     |
| 2.0                | 1:2                      | 1:0.5                     |
| 1.4                | 1:2.9                    | 1:0.7                     |

Table 4

### **WARNING**

Before operating, ALWAYS turn the power switch OFF and check that the machine has already stopped.

## 5.9 Adjusting suction pipe

### ○ Using air pipes

Open or close the cock<sup>②</sup> of the hand valve<sup>①</sup> to adjust the suction power.

Keep it to a minimum for suctioning chips.

When sewing light weight fabric, too much power can cause uneven edge of the fabric trimmed.

### ○ Using vacuum system

Keep it to a minimum for suctioning chips.

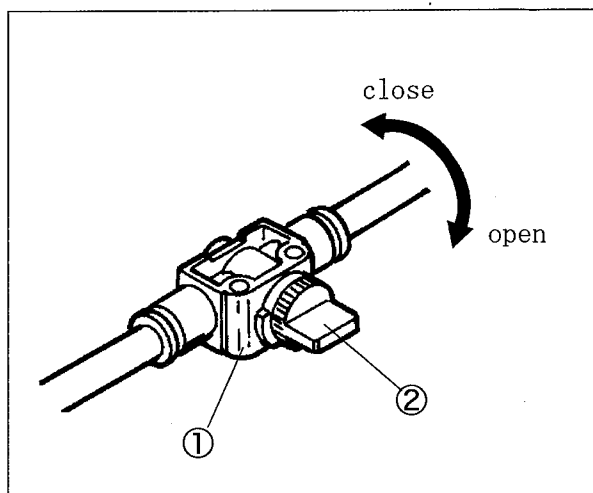


Fig. 32

## 5.10 SP device and HR device

Use SP device (needle thread oiling) and HR device (needle point cooling) as standard equipment to prevent thread breakage and skip stitch when running the machine at high speed or using synthetic thread and/or synthetic fabric.

Use dimethyl silicon oil.

Open the lid<sup>③</sup> of SP container and the lid<sup>④</sup> of HR container to check the oil level.

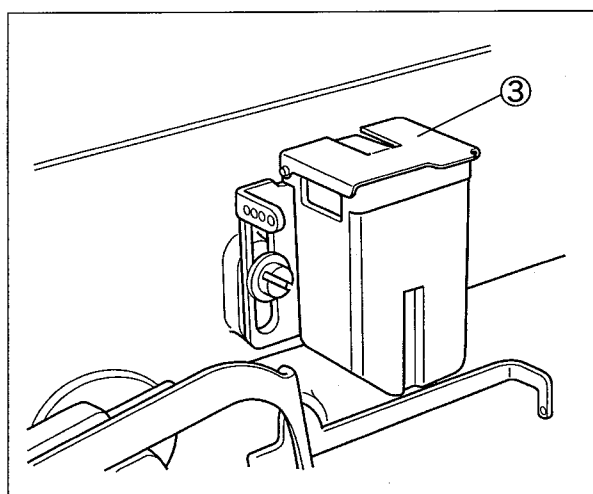


Fig. 33

### **CAUTION**

1. When not using SP or HR device, remove the felt. If attached, it may occur irregular condition during sewing.
2. If silicone oil is attached to the parts other than SP and HR devices, it can cause the machine trouble. Be sure to wipe it away.

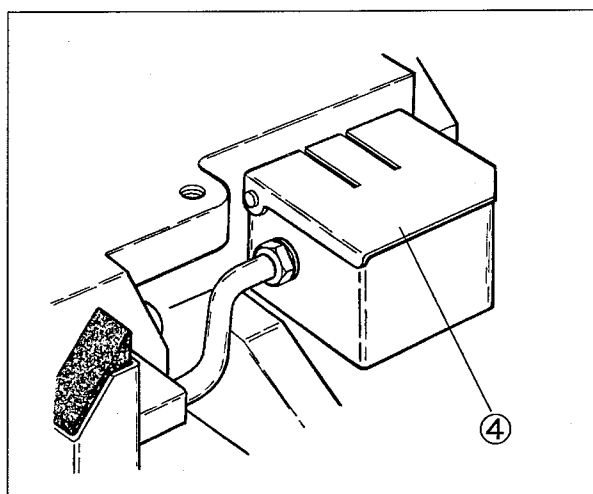


Fig. 34

## ⚠ WARNING

Before operating, ALWAYS turn the power switch OFF and check that the machine has already stopped.

### 5.11 Cleaning the machine



Clean waste thread and dust inside of the machine at the end of work a day.

Remove the seal plug① at the back of the machine and clean the grooves in the stitch plate, feed dog area, and oil filter screen area once a week.

#### NOTE

If the oil filter screen is clogged with dust, oil in the cylinder does not return to the oil reservoir. It can cause oil leakage.

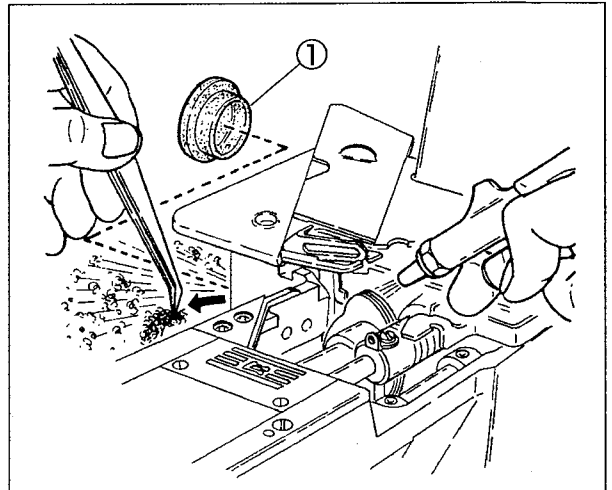


Fig. 35

### 5.12 Cleaning suction pipe

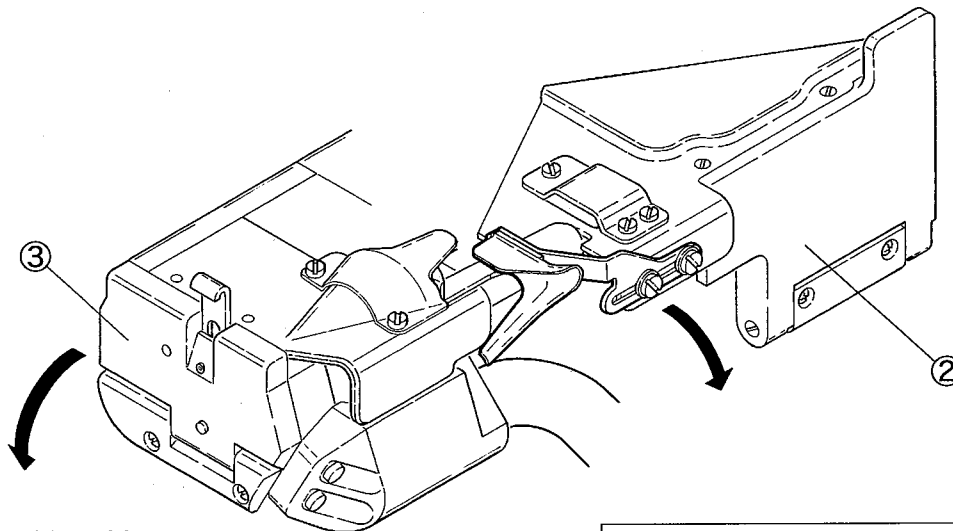


Fig. 36

When clogged with chips, clean the suction pipe.

Remove the suction pipe as follows:

- (1) Open the front cover ②.
- (2) Open the side cover ③.
- (3) Loosen the screws ④ of the suction pipe holder to remove the suction pipe (upper) ⑥ and the suction pipe holder ⑤ with a set. Then loosen the screw ⑧ to remove the suction pipe ⑦.

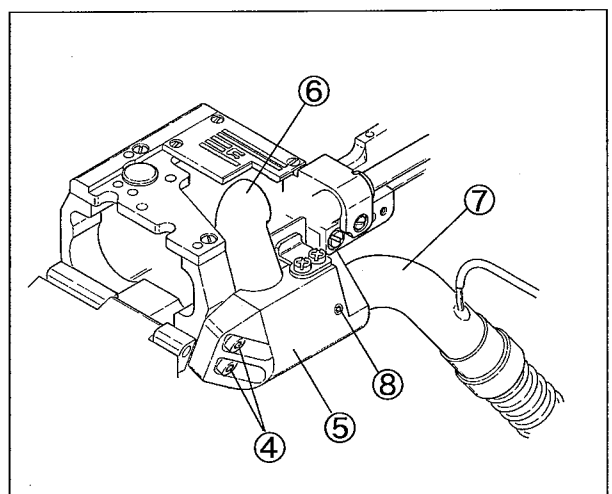


Fig. 37



# 6. Adjustments

## ⚠ WARNING

Before adjusting, ALWAYS turn the power switch OFF and check that the machine has already stopped.

### 6.1 Needle thread tension

As standard, make the distance between the needle thread take-up ① and the center of the left screw ② to 57 mm, and set the part "a" horizontally when the needle bar is at the highest point.

#### Adjusting:

- (1) Loosen the screws ②.
  - To tighten the needle thread, shift the needle thread take-up ① in the direction T.
  - To loosen it, shift it ① in the direction L.
- (2) Tighten the screws ② securely.

If not enough for adjusting above, move the needle thread eyelet ③ to adjust it.

Make the distance between the top of the needle thread eyelet and the center of the screw ④ to 12 mm as standard.

#### Adjusting:

- (1) Loosen the screw ④.
  - To tighten the needle thread, move the needle thread eyelet ③ in the direction T.
  - To loosen it, move it ③ in the direction L.
- (2) Tighten the screw ④ securely.

As the the needle thread loop is difficult to be formed depending on the thread used, the looper cannot catch the needle thread. It can cause skip stitch.

Then thread the needle thread through the needle thread retainer dice ⑥ with the needle thread retainer support ⑤ (No. 3103000) attached on the machine as accessories.

Note: With UT device, do not use the needle thread retainer dice because it cannot form seams at the beginning of sewing.

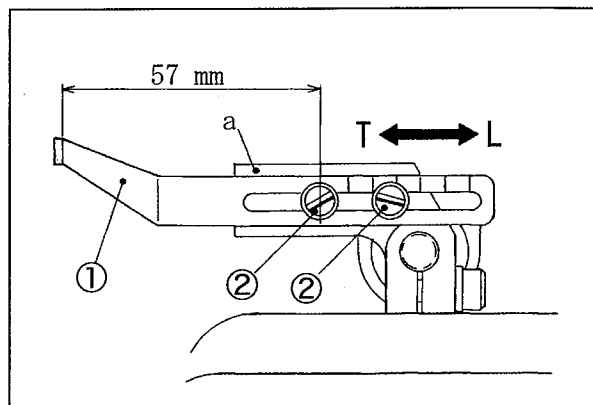


Fig. 38

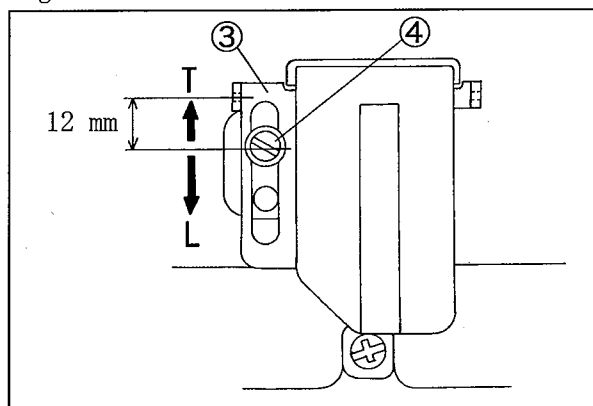


Fig. 39

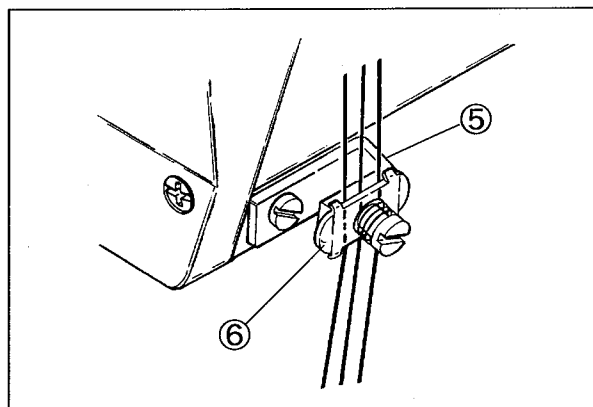


Fig. 40

Use the needle thread guide when the needle thread forms loop unstably with stretchable thread like synthetic thread.

As standard, align the center of the needle bar thread eyelet⑦ eye even with the top of the needle thread guide⑧, and they are parallel when the needle bar is at the lowest point.

Loosen the screw⑨ to adjust the height and right-and-left position of the needle thread guide⑧.

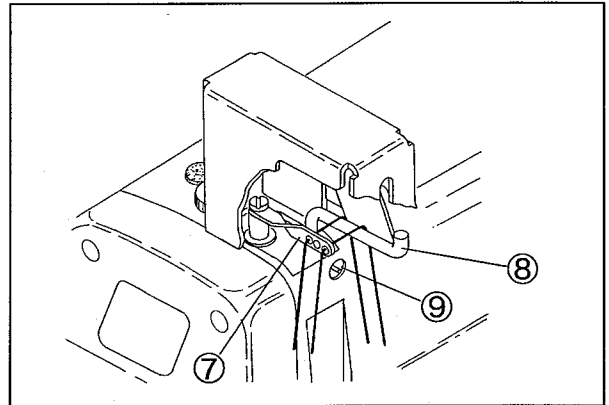


Fig. 41

## 6.2 Top cover thread tension

Loosen the screw② and move the top cover thread eyelet(right)① to adjust it.

- To decrease take-up amount, move it in the direction T.
- To increase it, move it in the direction L.

When using stretchable thread like woolly, move it ① in the direction L.

NOTE: Thread woolly thread through the lower eye.

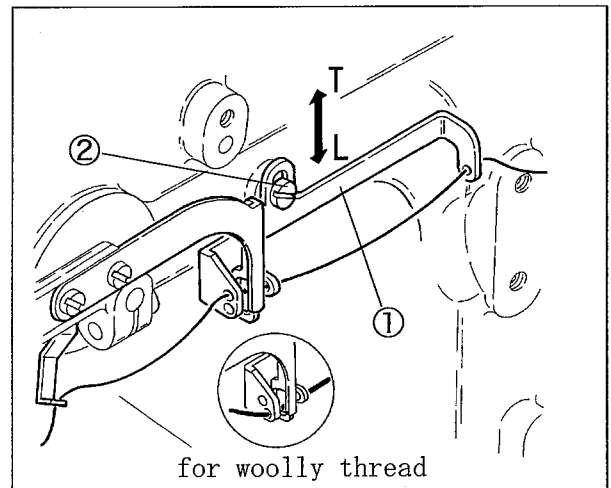


Fig. 42

### 6.3 Loper thread tension

Align the eyes of the thread take-up eyelets ④ and ⑤ with marks ③ of the supporting plate as standard.

Loosen the screws and move each eyelet to adjust it.

- To increase take-up amount, move it forward.
- To decrease it, move it backward.

#### NOTE

Too much take-up of the looper thread can cause skip stitch.

When using woolly thread, move the thread take-up eyelets ④ and ⑤ forward fully and never thread it through the supplementary tension disc ⑥.

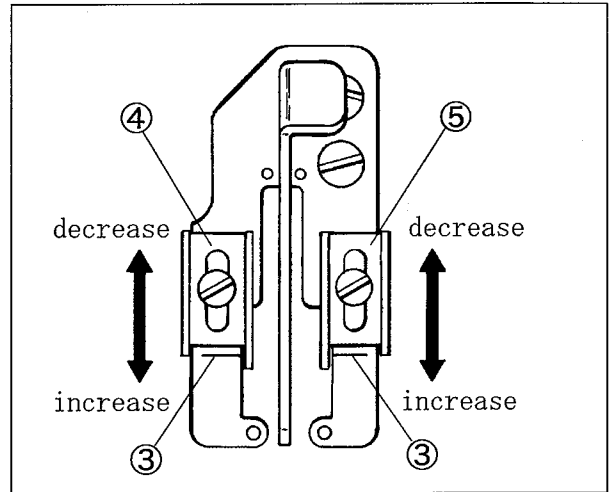


Fig. 43

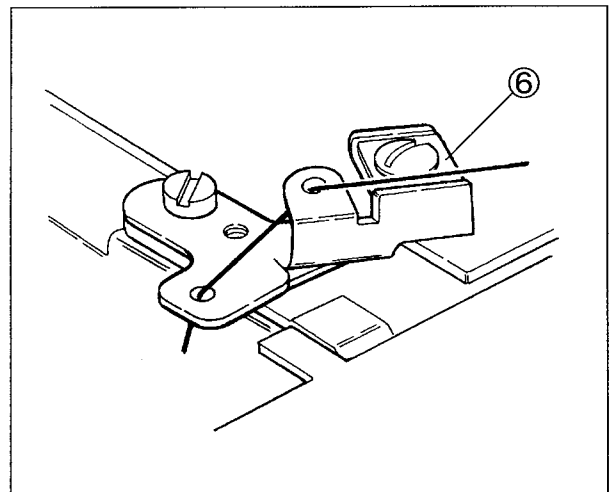


Fig. 44

## 6.4 Relation between needle and spreader

### 6.4.1 Spreader

- (1) Loosen the screws ③ and ④ of the spreader holder. (Fig. 47)
- (2) Make the clearance between the left needle and the hook ② of the spreader ① to 0.5 - 0.8 mm. (Fig. 45)
- (3) Make the clearance between the center of the left needle and the hook ② to 4.5 - 5.5 mm when the spreader ① is at the extreme left. Then tighten the screw ④ securely. (Figs. 45 and 47)
- (4) Make the height from the top of the stitch plate to the bottom of the spreader to 8.5 - 9.5 mm. Then tighten the screw ③ securely. (Figs. 46 and 47)

### NOTE

Adjust the height of the spreader so that the top cover thread passes behind the right needle and be caught by the left needle within adjustable range based on the needle distance.

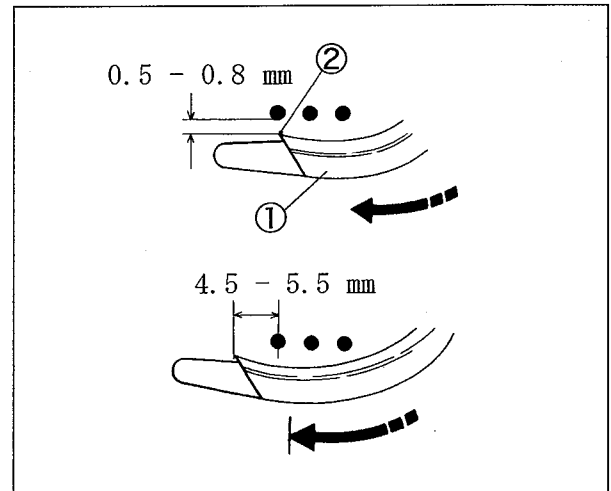


Fig. 45

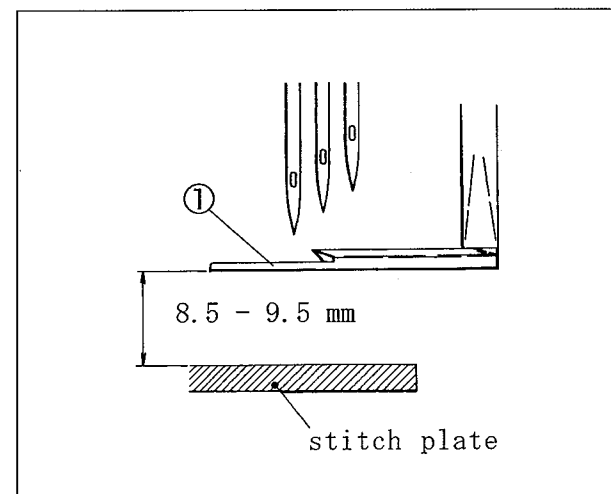


Fig. 46

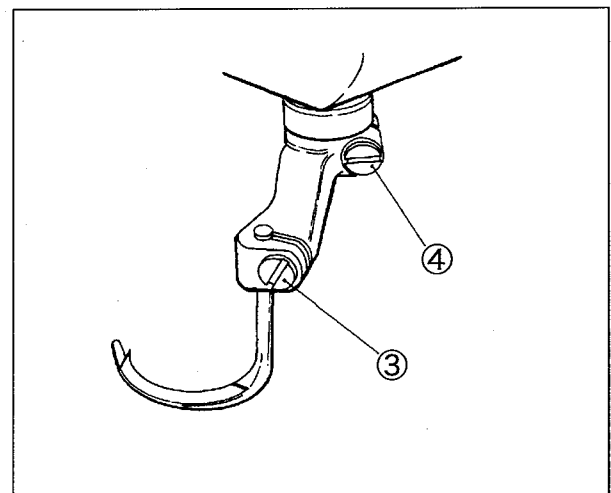


Fig. 47

## 6.Adjustments

### 6.4.2 Top cover thread guide

- (1) Loosen the screws ② of the top cover thread guide ①. (Fig. 48)
- (2) Make the clearance between the top of the spreader ③ and the bottom of the top cover thread guide ① to 0.5 mm. (Fig. 48)
- (3) Set the hook ④ in the center of the slot of the top cover thread guide ① when the spreader ③ is at the extreme right. Then, tighten the screws ② securely. (Figs. 48 and 49)

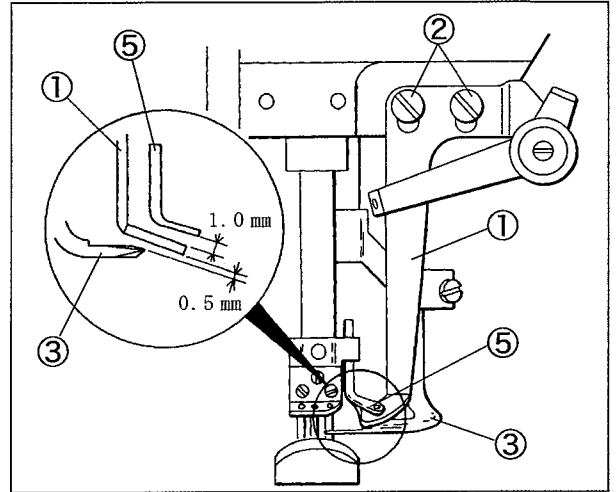


Fig. 48

### 6.4.3 Top cover thread eyelet

- (1) Loosen the screw ⑥ of the top cover thread eyelet ⑤. (Fig. 49)
- (2) Make the clearance between the top of the top cover thread guide ① and the top cover thread eyelet ⑤ to 1.0 mm when the needle bar is at the lowest point. (Fig. 48)
- (3) Set the eye of the top cover thread eyelet ⑤ along the extending line from the slot of the top cover thread guide ①. (Fig. 49)
- (4) Tighten the screw ⑥ securely. (Fig. 49)

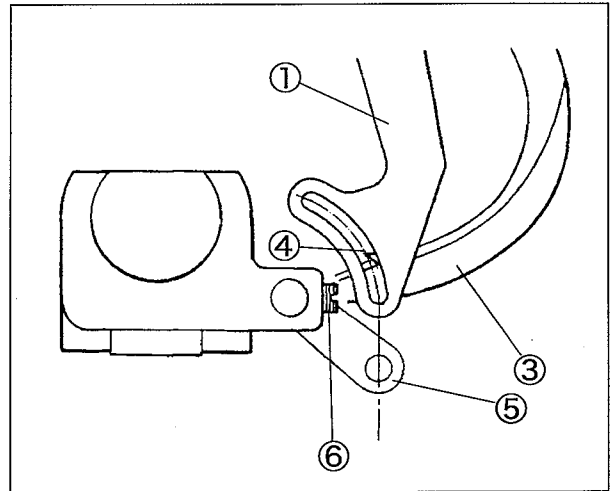


Fig. 49

## 6.5 Distance between needle and looper

The distance between the looper tip and the center of the right needle depends on the needle distance when the needles are at the lowest points and the looper ① is at the extreme right.

See Table 5 and loosen the screw ② of the looper holder to adjust the distance.

### NOTE

The distance between the center of the needle bar and the looper ① tip is 6.0 mm even if the needle distance changes.

| needle distance<br>(mark) | gauge mark | looper's<br>distance |
|---------------------------|------------|----------------------|
| 3.2 mm (32)               | A          | 4.4 mm               |
| 4.0 " (40)                | B          | 4.0 "                |
| 4.8 " (48)                | C          | 3.6 "                |
| 5.6 " (56)                | D          | 3.2 "                |
| 6.4 " (64)                | E          | 2.8 "                |

Table 5

The timing gauge (No. 95220) makes it possible to adjust the distance easily.

The gauge is an extra part. Place an order from our agents or directly from us.

## 6.6 Using timing gauge

The gauge has the marks (A, B, C, D, E) for each needle distance.

Move the looper at the extreme right. Keep fitting the right needle into the groove "V" corresponding needle distance, and fit the looper tip to the gauge.

Then, tighten the screw ② securely.

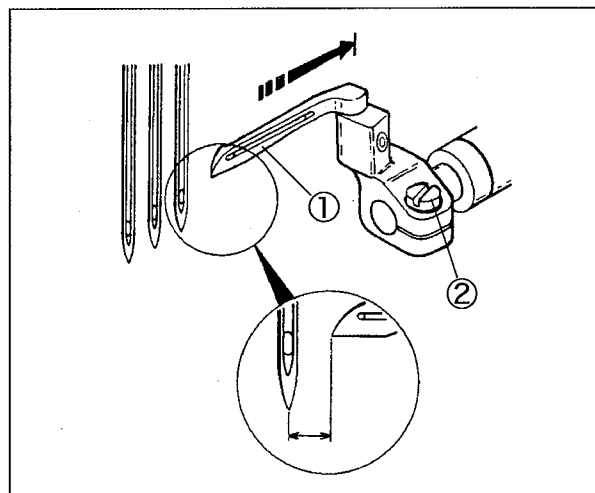


Fig. 50

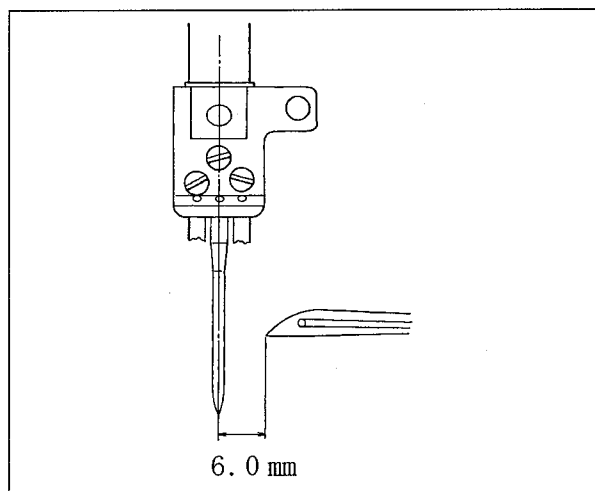


Fig. 51

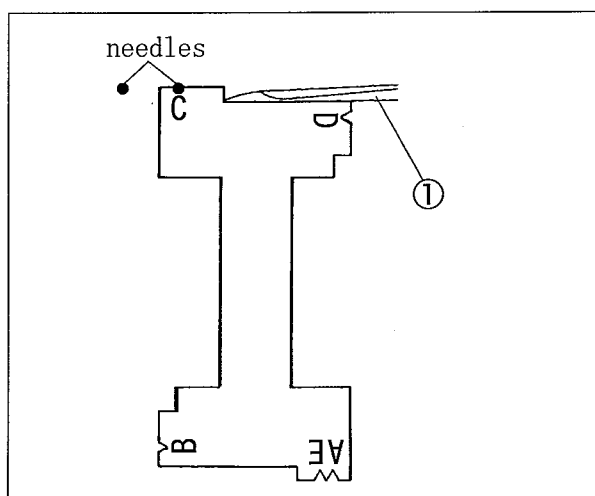


Fig. 52

### 6.7 Height of needle

- (1) Install the needle to the left hole in the needle clamp.
- (2) Check the looper is inserted into the looper holder fully.
- (3) Turn the handwheel until the looper tip meets the center of the left needle.
- (4) Loosen the screw ① of the needle bar bracket. Move the needle bar up or down so that the looper tip passes 0.8 - 1.3 mm above the top of the needle eye.
- (5) Tighten the screw ① securely. Check that the needles drop in the centers of the needle holes of the stitch plate respectively.

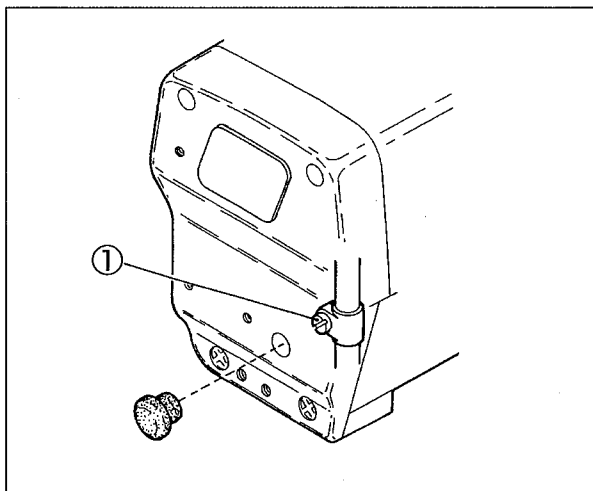


Fig. 54

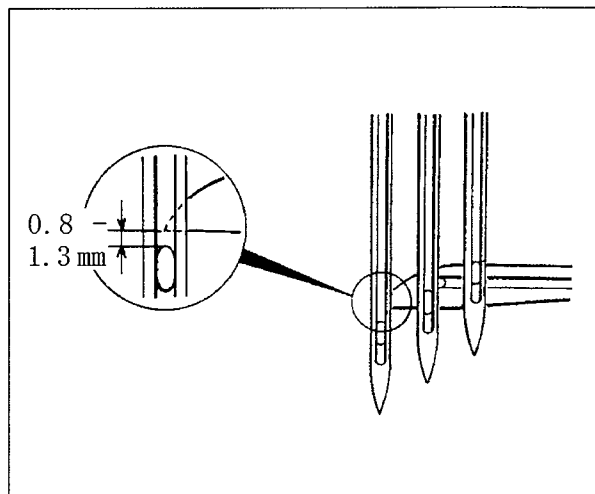


Fig. 53

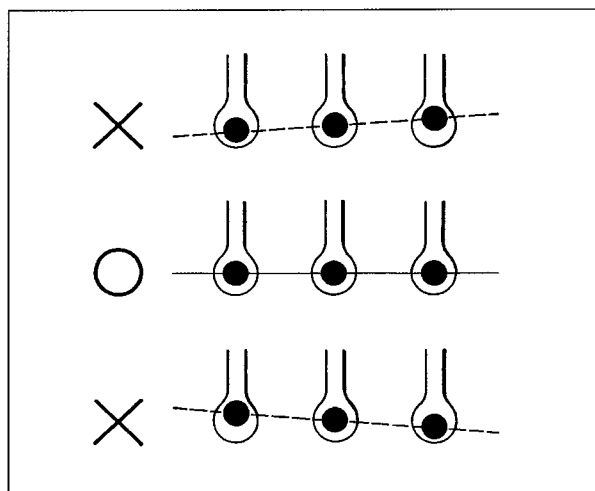


Fig. 55

### 6.8 Front-and-rear position of needle and looper

- (1) Turn the handwheel until the looper tip ④ meets the center of the left needle ⑤.
- (2) Loosen the screw ③. Move the looper holder back or forth to make the clearance between the back of the left needle ⑤ and the looper tip to 0.2 - 0.3 mm. Then, tighten the screw ③ securely.

#### NOTE

When tightening the screw ③, front-and-rear position of the looper may be shifted. Recheck the position after tightening it.

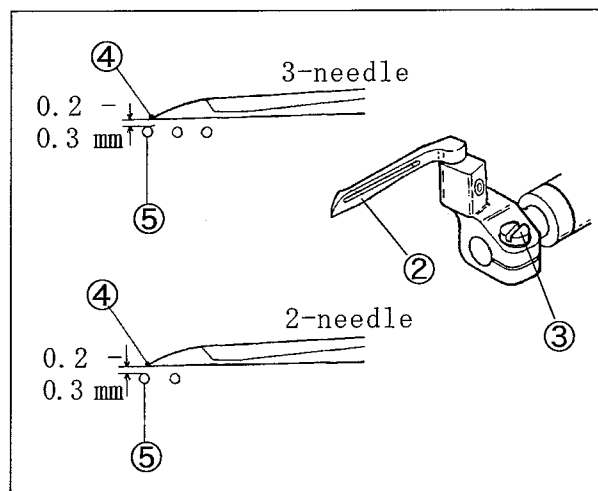


Fig. 56

## 6.9 Needle and needle guard (rear)

### Height of needle guard(rear):

- (1) Rotate the handwheel until the needle is raised and the looper ① tip comes to the center of the left needle ②.
- (2) Loosen the screw ③.
- (3) Adjust the needle guard(rear) ④ so that the left needle ② tip can be held 0.1 - 0.3 mm above the flat part "b".
- (4) Tighten the screw ④ slightly.

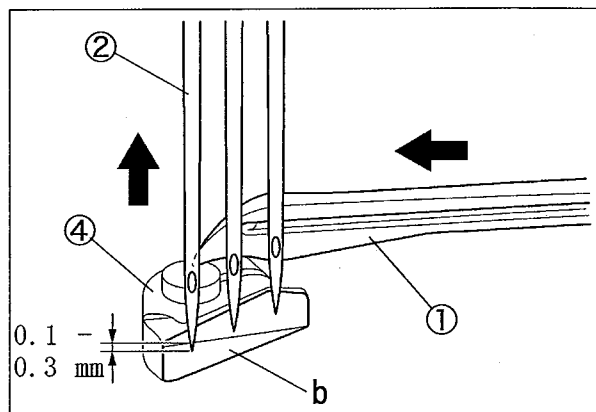


Fig. 57

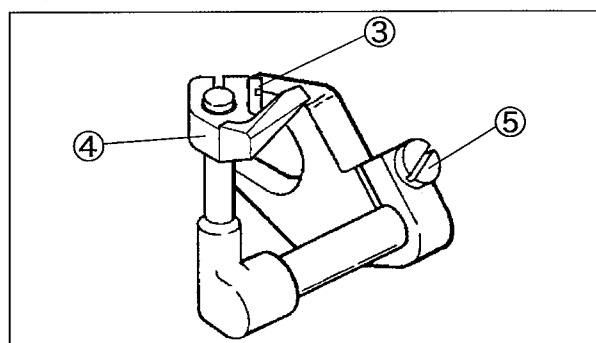


Fig. 58

### Front-and-rear position and angle between needle guard (rear) and needle:

Loosen the screws ③ and ⑤ to make adjustments. At the same time, let the adjustments meet the following three conditions.

- (1) When the looper ① moves from the right to the left, and the looper ① tip meets the right needle, the needle guard(rear) ⑤ pushes the right needle so that the clearance between the right needle and the looper ① is 0. (Fig. 59)
- (2) When the looper ① tip meets the middle needle, adjust the angle of the needle guard (rear) ④ so that the clearance between the middle needle and the looper ① is 0. (Fig. 59)
- (3) When the looper ① tip meets the left needle ②, even if the left needle ② is pushed, the needle guard(rear) ④ holds the left needle ② without touching the looper ① tip. (Fig. 60)

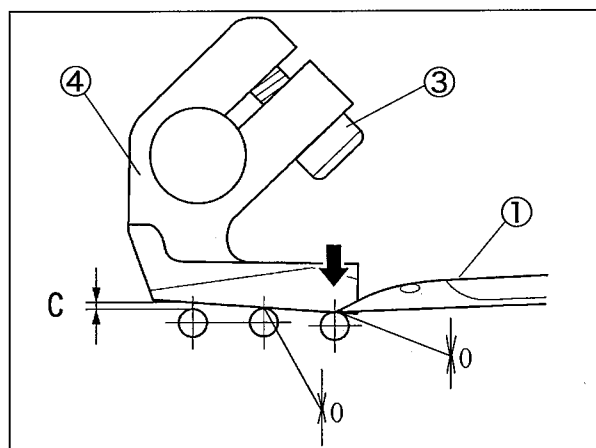


Fig. 59

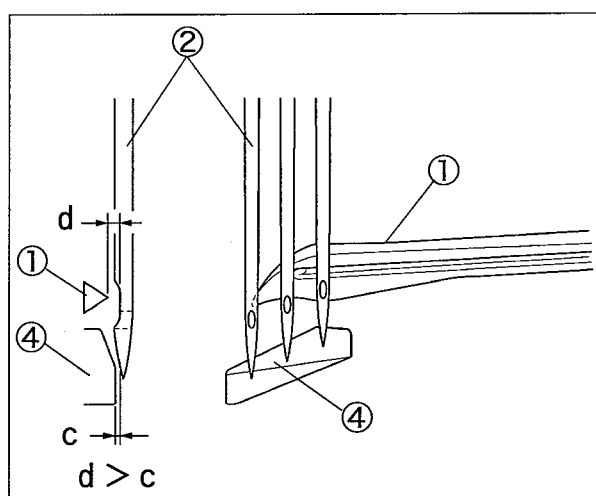


Fig. 60

### In case of 2-needle machine:

Loosen the screws ③ and ⑤ to make adjustments. At the same time let the adjustment



## 6.10 Needle and needle guard (front)

- (1) Turn the handwheel clockwise until the looper tip meets the center of the left needle. (Fig. 61)
- (2) Loosen the screw①. Adjust the height from the needle tip to the angular part of the needle guard(front)② to 1.5 - 2.0 mm.
- (3) Tighten the screw① securely. (Fig. 62)
- (4) Loosen the screws① and ③. Adjust the clearance between the needle guard(front)② and the left or right needle to 0 - 0.3 mm respectively. (Fig. 63)
- (5) Tighten the screws① and ③ securely. (Fig. 62)

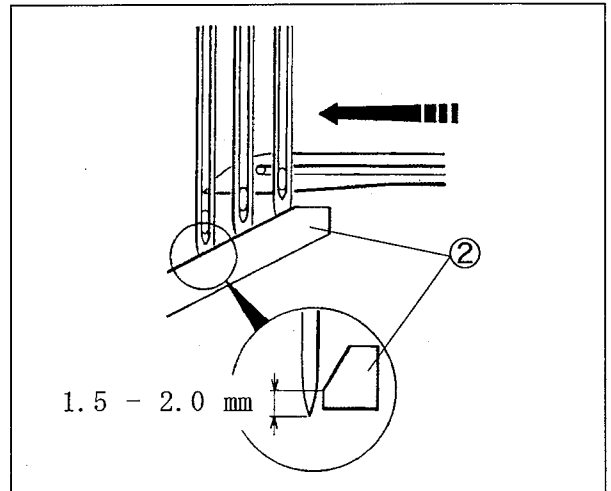


Fig. 61

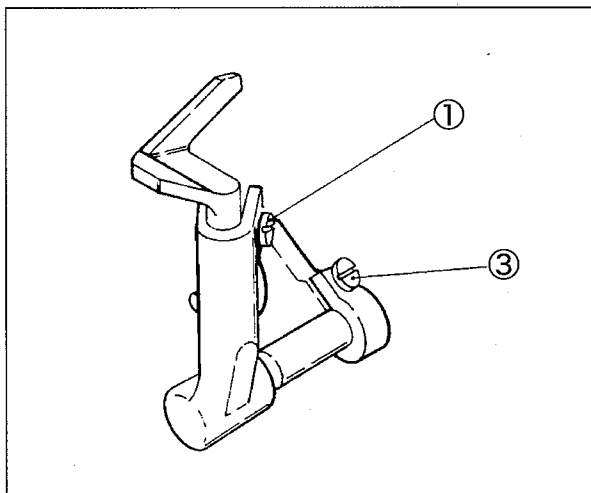


Fig. 62

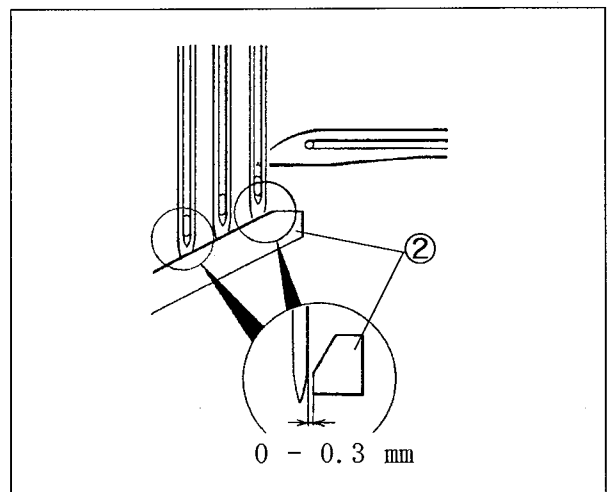


Fig. 63

## 6.11 Height of feed dog

As standard, adjust the height from the top of the stitch plate to the tops of the differential feed dog⑤ and the main feed dog④ to 1.0 - 1.2 mm, and they are parallel to the top of the stitch plate when the feed dogs are at the highest points.

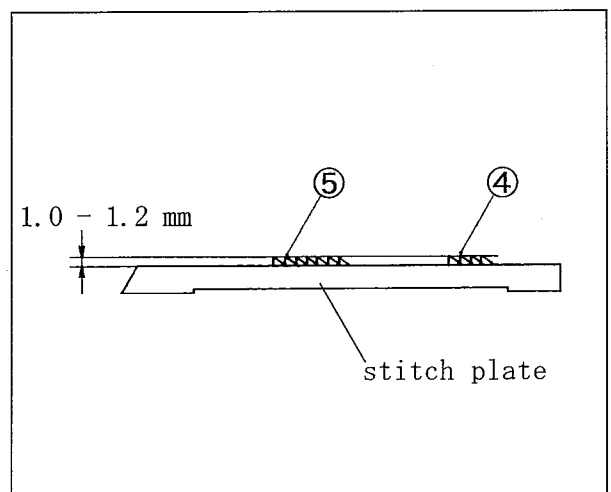


Fig. 64

## 6.12 Removing presser foot and presser foot lift

The presser foot lift is 6.0 mm.

### Removing presser foot

- (1) Loosen the screws② of the lifter lever stop ① and the screws⑤ of the collar④.
- (2) Push down the lifter lever③ to remove the presser foot⑦.

### Adjusting height of presser foot

- (1) Push down the lifter lever③ to make the height from the top of the stitch plate to the bottom of the presser foot to 6.0 mm.
- (2) Tighten the screws② securely.
- (3) Make the clearance between the presser bar bushing⑥ and the top of the collar④ to 0.2 mm.
- (4) Tighten the screws⑤ securely.

After adjusting, push down the lifter lever③ fully to check the presser foot height.

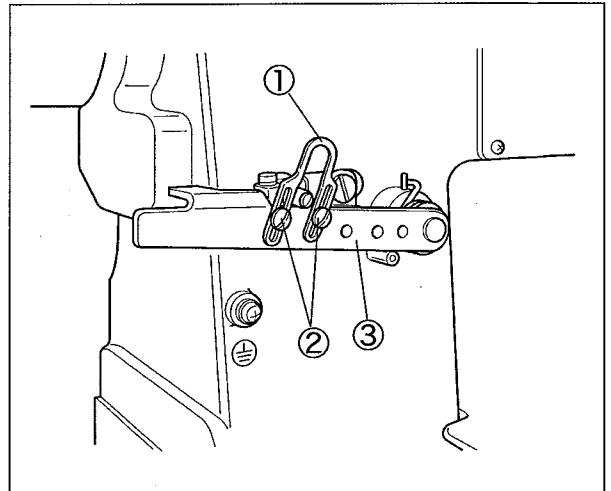


Fig. 65

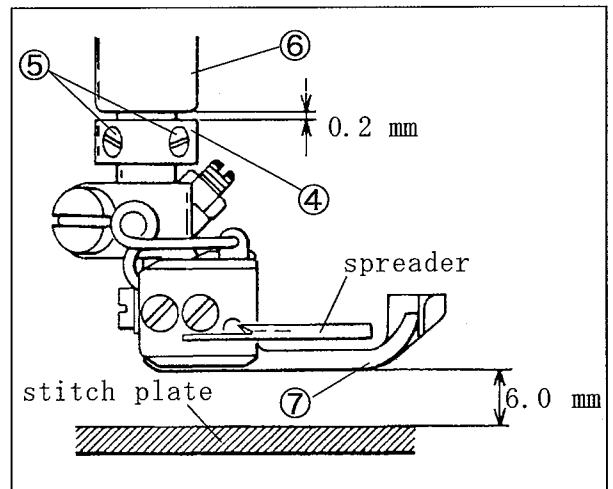


Fig. 66

### 6.13 Replacing fabric presser

The fabric presser② for hem width 19.1 mm (3/4 inches) is set on the right of the presser foot① at shipment. Also packed for 25.4 mm (1 inch). Use the fabric presser based on hem width.

To remove the fabric presser②, loosen the screws③ of the presser foot①.

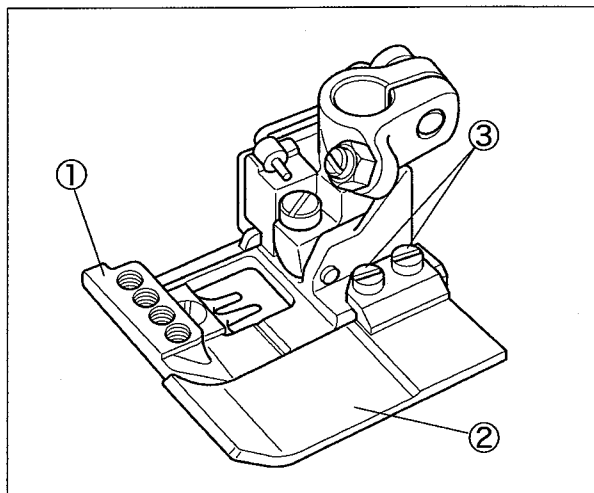


Fig. 67

# 7. Adjusting knife trimming mechanism

## 7.1 Adjusting folder

Adjust the trimming width of the fabric edge with the folder(left)①.

Adjust the folding width of the fabric with the folder(right)③.

Loosen the screws② and ④ to adjust them.

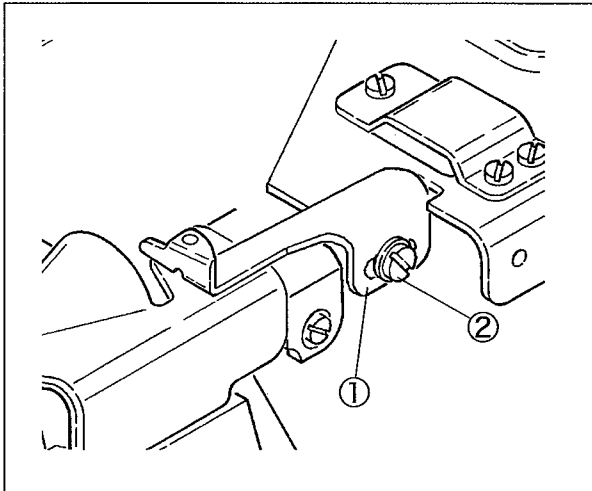


Fig. 68

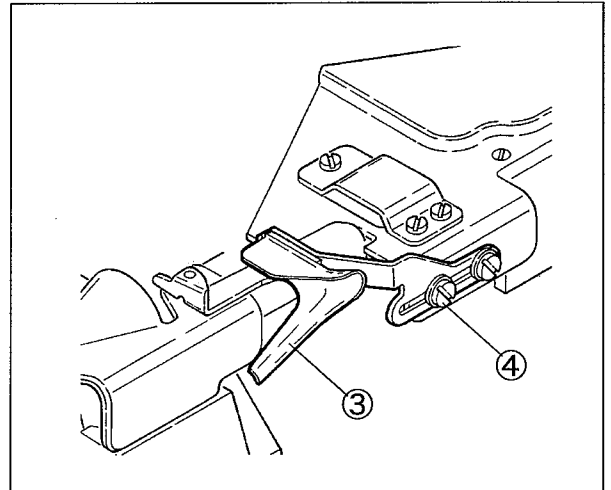


Fig. 69

## 7.2 Trimming width of fabric

Loosen the screw⑤ to move the upper knife holder⑥ and the lower knife holder⑦ simultaneously.

Tighten the screw⑤ securely after adjusting required position.

### ⚠ CAUTION

1. Tightening torque is 1.5 - 2 N·m (15 - 20 kgf·cm). Do not tighten with too much torque.
2. Supply a little amount of oil to the holes⑧ and ⑨ periodically.

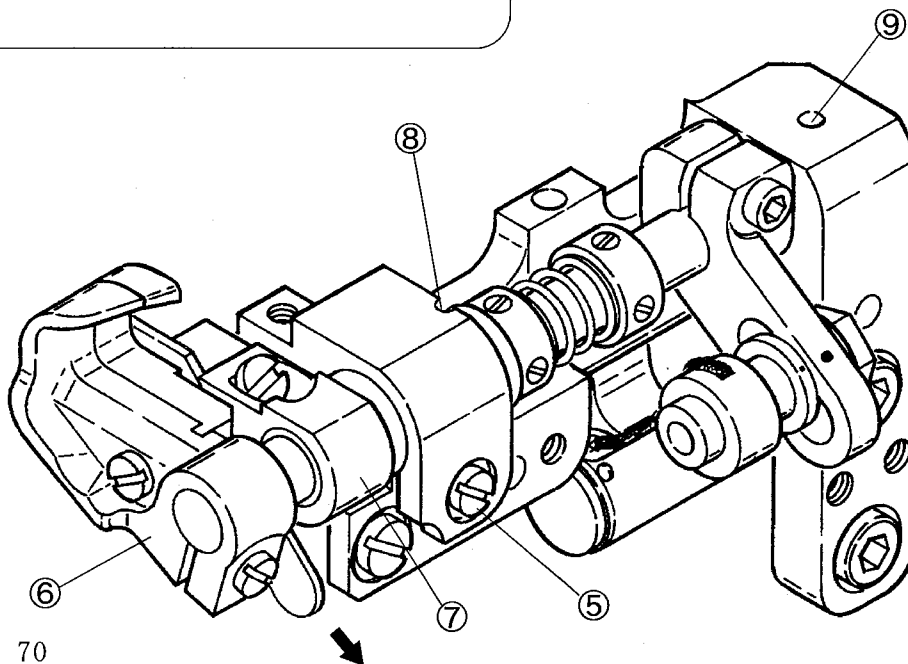


Fig. 70

### 7.3 Removing and installing lower knife

#### Removing lower knife:

- (1) Open the front and the side covers.
- (2) Loosen the screws① of the collar(left).
- (3) Shift the upper knife holder② to the left to make the clearance between the upper and the lower knives.
- (4) Tighten the screws① slightly.
- (5) Loosen the screw③ to pull out the lower knife④ downward.

#### Installing lower knife:

- (1) Set the lower knife④ blade even with the top of the stitch plate. Then, tighten the screw③ securely.
- (2) Loosen the screws①. (The upper knife engages with the lower knife with its spring.)
- (3) Check the sharpness of the blades by setting a thread between the upper and the lower knives while rotating the pulley by hand.
- (4) Tighten the screws① securely.
- (5) Recheck the sharpness of the blades.

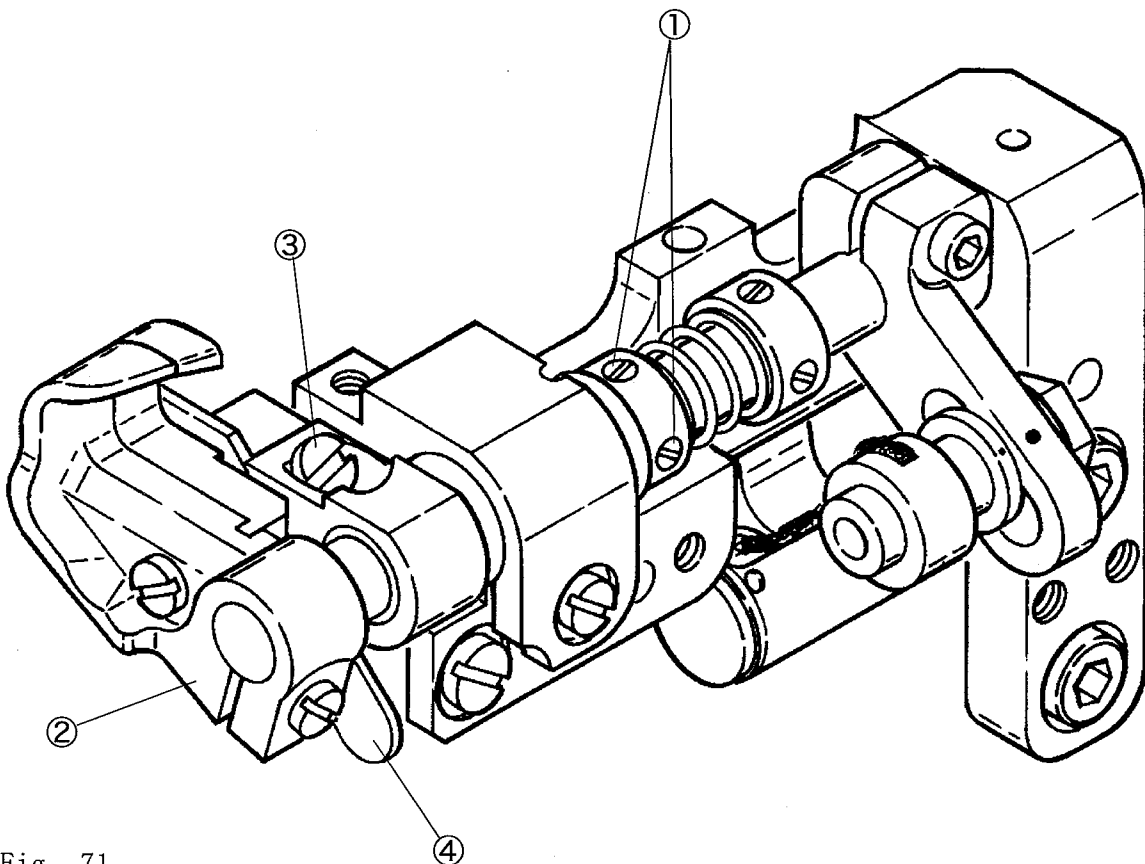


Fig. 71

## 7.4 Removing and installing upper knife

- (1) Loosen the screw② of the upper knife adjusting lever①. Rotate the upper knife holder③ upward slightly until the screw⑤ appears. Then, tighten the screw② slightly.
- (2) Loosen the screw⑤ to remove the upper knife④.
- (3) Set the upper knife④ in the key groove of the upper knife holder③ with the screw⑤.
- (4) Rotate the handwheel by hand to move the upper knife④ at the lowest point. Move the upper knife holder③ to set the upper knife④ tip 0 - 0.5 mm above the top of the lower knife⑥.
- (5) Check the sharpness of the blades by setting a thread between the upper④ and the lower⑥ knives while rotating the handwheel by hand.

### NOTE

Too much engagement pushes up the fabric by the upper knife tip. It cannot trim the fabric edge.

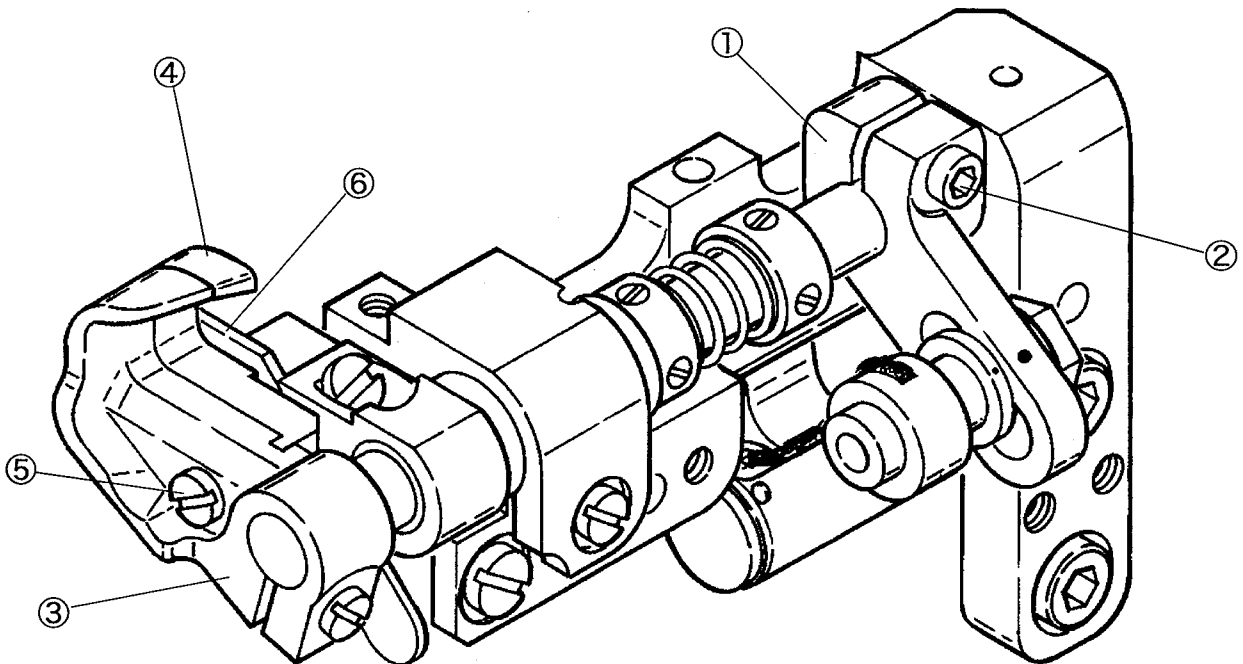


Fig. 72

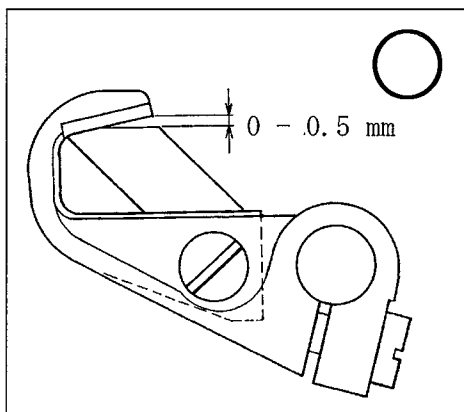


Fig. 73

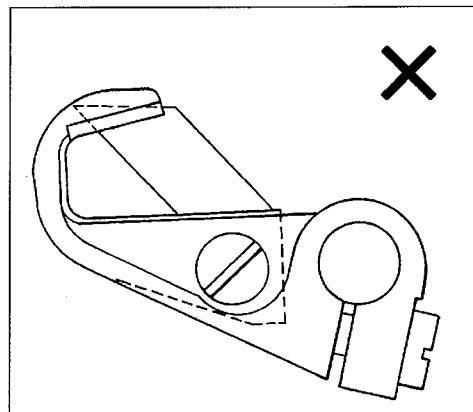


Fig. 74

### 7.5 Stroke of upper knife

The standard stroke of the upper knife is about 7.5 mm.

#### Adjusting the stroke:

- (1) Loosen the nut ② of the adjusting lever pin ①.
- (2) Move the adjusting lever pin ① to adjust it.
  - To make stroke large, move it in the direction X.
  - To make stroke small, move it in the direction Y.
- (3) Tighten the nut ② securely.
- (4) Loosen the screw ④ of the upper knife adjusting lever ③.
- (5) Rotate the handwheel by hand to move the upper knife ⑥ at the lowest point. Move the upper knife holder ⑤ to set the upper knife ⑥ tip 0 - 0.5 mm above the top of the lower knife ⑦. (See Fig. 72)
- (6) Check the sharpness of the blades by setting a thread between the upper ⑥ and the lower ⑦ knives while rotating the handwheel by hand.

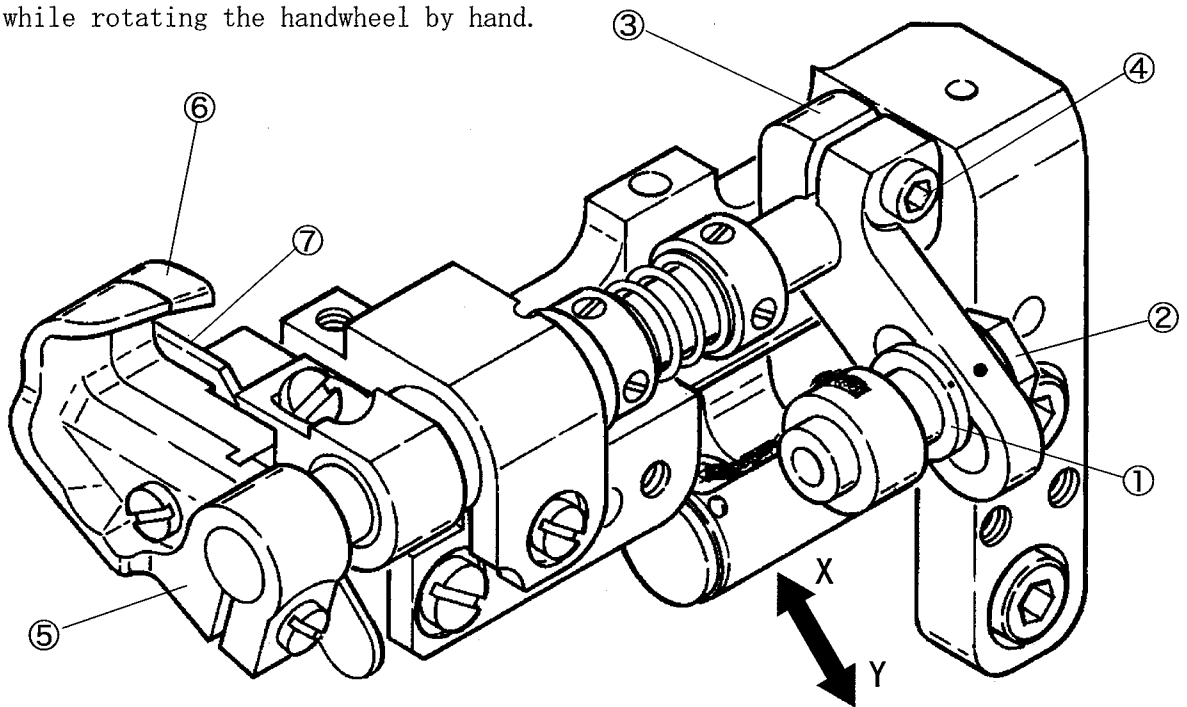


Fig. 75

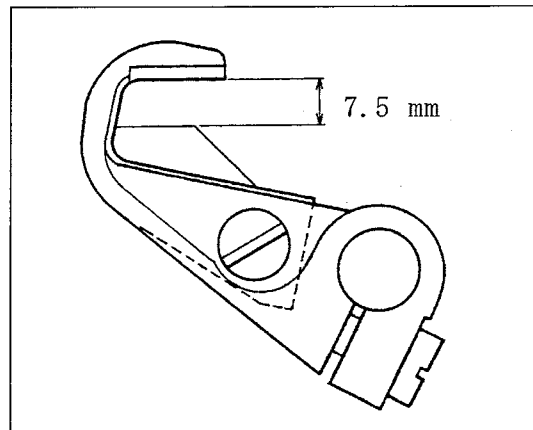


Fig. 76

# 8. Specifications

|                              |  |
|------------------------------|--|
| Model                        | VC3711M class  |
| Description                  | High speed cylinder bed 3-needle (2-needle) interlock stitch machine with left-hand trimming knife |
| Dimensions                   | 475 mm (L) × 220 mm (W) × 405 mm (H)   |
| Circumference of Cylinder    | 300 mm   |
| Weight                       | 39 kg  |
| Stitch Type                  | ISO 406, 407, 602, 605   |
| Application                  | Hemming operation of knitted or woven fabric for light weight material                             |
| Sewing Speed                 | Up to 5000 rpm (during intermittent operation)   |
| Stitch Length                | 1.4 - 3.6 mm<br>Number of stitches per inch(25.4 mm) 7 - 18 stitches<br>per 30 mm 8 - 21 stitches  |
| Needle System                | UY×128GAS #9 - #14 (standard: #10) (65 - 90)   |
| Needle Distance              | 3-needle: 4.8 mm, 5.6 mm, 6.4 mm<br>(2-needle: 3.2 mm, 4.0 mm)                                     |
| Needle Stroke                | 31 mm  |
| Upper Knife Stroke           | 5.5 - 8.5 mm (adjustable by lever)   |
| Suction of Chips             | Venturi or vacuum system   |
| Presser Foot Lift            | 6.0 mm   |
| Feed Regulation              | Push button system   |
| Differential Ratio           | Max. normal differential: 1:2.9<br>Max. reverse differential: 1:0.3                                |
| Differential Feed Regulation | Adjustable by adjusting knob or external lever even during operation                               |
| Lubrication                  | Lubrication automatically by trochoid-shaped pump combined with splash system                      |
| Lubricating Oil              | YAMATO SF OIL No. 28   |
| Capacity of Oil Reservoir    | 800 cc   |
| Installation                 | Table top type   |

Table 6





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